

PHILIPS

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MODEL

SERVICE MANUAL

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Service
Service

Service Manual

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1. Technical specifications

1.1 Specifications

Mains voltage	: 220V - 240V ($\pm 10\%$); 50-60Hz ($\pm 5\%$)
Aerial input impedance	: coaxial 75 Ω
Minimal aerial voltage	: 30 μ V (VHF), 40 μ V (UHF)
Maximum aerial voltage	: 180 mV
Programmes	: 0-99
VCR programmes	: 0, 90-99

1.2 Specification of the terminal sockets

1.2.1 Front connections

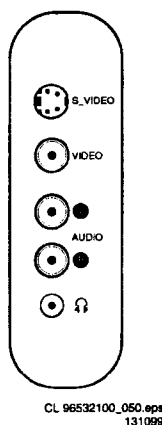


Figure 1-1

Audio/Video

- Video	1Vpp/75 Ω
- Audio	L(0.5Vrms $\geq 10k\Omega$)
- Audio	R(0.5Vrms $\geq 10k\Omega$)
- Headphone	(32-600 Ω $\geq 10m\Omega$)



SVHS

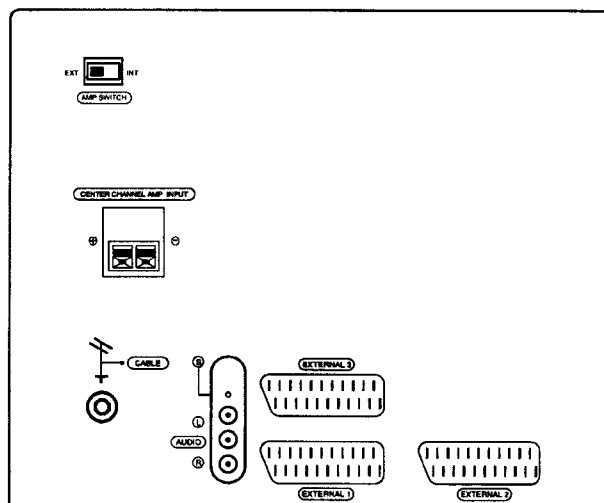
1 -	
2 -	
3 - Y	(1Vpp; 75 Ω)
4 - C	(0.3 Vpp; 75 Ω)



1.2.2 Rear connections

See figure 1.2

External 1 (in/out): RGB+CVBS



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Figure 1-2

1 - Audio	R (0.5Vrms $\leq 1k\Omega$)	
2 - Audio	R (0.5Vrms $\geq 10k\Omega$)	
3 - Audio	L (0.5Vrms $\leq 1k\Omega$)	
4 - Audio		
5 - Blue		
6 - Audio	L (0.5Vrms $\geq 10k\Omega$)	
7 - Blue	(0.7Vpp/75 Ω)	
8 - CVBS-status	0-1.3V:INT 4.5-7V:EXT 16:9 9.5-12V:EXT 4:3	
9 - Green		
10-		
11- Green	(0.7Vpp/75 Ω)	
12-		
13- Red		
14- RGB-status		
15- Red	(0.7Vpp/75 Ω)	
16- RGB-status	0-0.4V:INT 1-3V:EXT/75 Ω	
17- CVBS		
18- CVBS		
19- CVBS	(1Vpp/75 Ω)	
20- CVBS	(1Vpp/75 Ω)	
21- Earth socket		

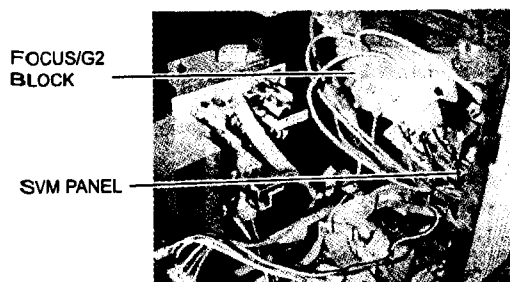
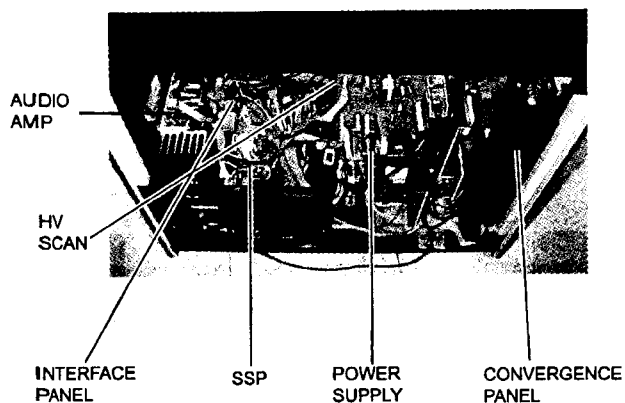
External 2 (in/out): SVHS+RGB+CVBS (intended for VCR.)

1 - Audio	R (0.5Vrms $\leq 1k\Omega$)	
2 - Audio	R (0.5Vrms $\geq 10k\Omega$)	
3 - Audio	L (0.5Vrms $\leq 1k\Omega$)	
4 - Audio		
5 - Blue		
6 - Audio	L (0.5Vrms $\geq 10k\Omega$)	
7 - Blue /		
Chroma out	(0.7Vpp/75 Ω)	
8 - CVBS-status	0-1.3V:INT 4.5-7V:EXT 16:9 9.5-12V:EXT 4:3	
9 - Green		
10-	Easy link	
11- Green	(0.7Vpp/75 Ω)	
12-		
13- Red		
14- RGB-status		

15- Red / chroma-		
in	(0.7Vpp/75Ω)	⊕
16- RGB-status	(0-0.4V:INT	
	1-3V:EXT/75Ω)	
17- CVBS		⊥
18- CVBS		⊥
19- Y/CVBS	(1Vpp/75Ω)	⊕
20- Y/CVBS	(1Vpp/75Ω)	⊕
21- Earth socket		

External 3 (In): CVBS+Audio (optional)

1 -		
2 - Audio	R (0.5Vrms >10kΩ)	⊕
3 -		
4 - Audio		⊥
5 -		
6 - Audio	L (0.5Vrms>10kΩ)	⊕
7 -		
8 - CVBS-status	0-1.3V:INT	
	4.5-7V:EXT 16:9	
	9.5-12V:EXT 4:3	⊕
9 -		
10-		
11-		
12-		
13-		
14-		
15-		
16-		
17- CVBS		⊥
18- CVBS		⊥
19-		
20- CVBS	(1Vpp/75Ω)	⊕
21- Earth socket		



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Figure 1-3

2. Safety instructions, Maintenance instruction, Warnings and Notes

2.1 Safety instructions for repairs ▲

1. Safety regulations require that during a repair:
 - The set should be connected to the mains via an isolating transformer;
 - Safety components, indicated by the symbol ▲, should be replaced by components identical to the original ones;
 - When replacing the CRT, safety goggles must be worn.
2. Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points.
 - As a strict precaution, we advise you to resolder the solder joints through which the horizontal deflection current is flowing, in particular ('general repair instruction'):
 - All pins of the line output transformer (LOT);
 - Fly-back capacitor(s);
 - S-correction capacitor(s);
 - Line output transistor;
 - Pins of the connector with wires to the deflection coil;
 - Other components through which the deflection current flows.
 - Note:
 - This resoldering is advised to prevent bad connections due to metal fatigue in solder joints and is therefore only necessary for television sets older than 2 years.
 - The wire trees and EHT cable should be routed correctly and fixed with the mounted cable clamps.
 - The insulation of the mains lead should be checked for external damage.
 - The mains lead strain relief should be checked for its function in order to avoid touching the CRT, hot components or heat sinks.
 - The electrical DC resistance between the mains plug and the secondary side should be checked (only for sets which have a mains isolated power supply). This check can be done as follows:
 - Unplug the mains cord and connect a wire between the two pins of the mains plug;
 - Set the mains switch to the "on" position (keep the mains cord unplugged!);
 - Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MΩ and 12 MΩ
 - Switch off the TV and remove the wire between the two pins of the mains plug.
 - The cabinet should be checked for defects to avoid touching of any inner parts by the customer.

2.2 Maintenance instruction

It is recommended to have a maintenance inspection carried out by a qualified service employee. The interval depends on the usage conditions:

- When the set is used under normal circumstances, for example in a living room, the recommended interval is 3 to 5 years.
- When the set is used in circumstances with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is 1 year.
- The maintenance inspection contains the following actions:
 - Execute the above mentioned 'general repair instruction'.

- Clean the power supply and deflection circuitry on the chassis.
- Clean the picture tube panel and the neck of the picture tube.

2.3 Warnings

1. ESD ▲
2. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
3. Available ESD protection equipment:
 - Complete kit ESD3 (small table mat, Wristband, Connection box, Extension cable and Earth cable) 4822 310 10671
 - Wristband tester 4822 344 13999
4. In order to prevent damage to ICs and transistors, all high-voltage flashovers must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 2-4 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx. 30s).
5. Together with the deflection unit and any multipole unit, the flat square picture tubes used form an integrated unit. The deflection and the multipole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.
6. Be careful during measurements in the high-voltage section and on the picture tube.
7. Never replace modules or other components while the unit is switched on.
8. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.
9. Wear safety goggles during replacement of the picture tube.

2.4 Notes

The direct voltages and oscillograms should be measured with regard to the tuner earth (⊥), or hot earth (⚡) as this is called. The direct voltages and oscillograms shown in the diagrams are indicative and should be measured in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L:3 kHz, R:1 kHz unless stated otherwise) and picture carrier at 475.25 MHz.

Where necessary, the oscillograms and direct voltages are measured with (⊥) and without aerial signal (⚡). Voltages in the power supply section are measured both for normal operation (⊕) and in standby (Ⓢ). These values are indicated by means of the appropriate symbols.

The picture tube PWB has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.

The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

4. Disassembly procedure

4.1 To remove the rear cover

1. Remove the 10 screws located on the sides and bottom of the lower center rear cover (1).
2. Remove the 3 screws on the bottom of the plastic upper rear cover (2). Remove the lower center rear cover (1).

Note: If you are only servicing a PWB or loudspeaker, you do not have to remove the plastic upper rear cover.

1. Remove the remaining 11 screws located in the upper rear cover (2). Lift cover up to dislodge from pegs and remove the cover.
2. Remove the 6 screws located in the mirror mounting board (18) and remove the board.

Note: care should be taken NOT to place fingerprints or smudges on the mirror.

1. Remove the 2 screws located in the plastic light barrier (16) and remove the barrier.
2. Remove the 12 screws located in the end rear covers (3), 6 per cover, and remove each cover.

4.2 To remove the optical assembly or individual light box assemblies

1. Separate CRT boards from assemblies to be removed.
2. To remove the optical assembly, loosen the 4 screws located in the assembly and lift assembly up and out.
3. To remove individual assemblies, loosen the 4 screws located in the assembly you wish to remove and lift the assembly up and out.

4.3 To remove the digital convergence panel

1. Remove the 2 screws located in the digital convergence panel frame. Lift the frame and panel to remove.

4.4 To remove the 25W amplifier panel

1. Remove the 2 screws located at the top of the 25W amplifier panel frame. Lift the frame and panel to remove.

4.5 To remove the rear switch panel

1. Remove the 2 screws located on the bottom of the rear switch panel. Press 2 tabs on the right side, slide back and remove the panel.

4.6 To remove the power supply

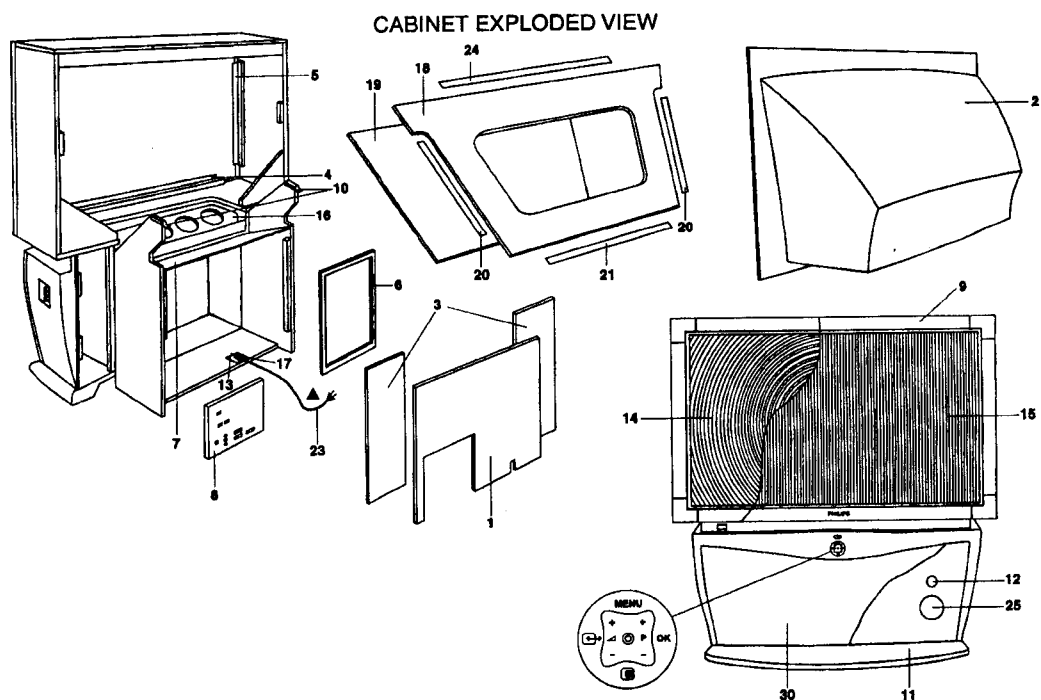
1. Remove the 3 screws located in the power supply panel. Press 3 tabs on the left side and remove the panel.

4.7 To remove the interface panel

1. Pull 2 tabs in the front of the interface panel. Lift the panel and slide forward to remove.

4.8 To remove the side jack panel

1. Remove 2 screws from the side jack panel frame. Slide the panel out to remove.



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Figure 4-1

5. Service modes, error codes and protections

In this chapter the following paragraphs are included:

- 5.1 Test points
- 5.2 Service modes and Dealer Service Tool and ComPair (including fault finding tips related to CSM-mode)
- 5.3 Error codes
- 5.4 Fault find tree

5.1 Test points

The MG5.1E chassis is equipped with test points in the service printing. These test points are referring to the functional blocks:

- P1-P2-P3, etc.: Test points for the power supply.
- L1-L2-L3, etc.: Test points for the line drive and line output circuitry.
- F1K-F2K-F3K, etc. on Small Signal Panel: Test points for the frame drive.
- F1F-F2F-F3F, etc. on CRT/Scavem Panel: Test points for the CRT-panel circuitry.
- F1-F2-F3, etc. on Large Small Signal Panel: Test points for the frame output circuitry.
- S1-S2-S3, etc.: Test points for the synchronisation circuitry.
- V1-V2-V3, etc.: Test points for the video processing circuitry.
- I1-I2-I3, etc.: Test points for the Tuner/IF part.
- A1-A2-A3, etc. on Small Signal Panel: Test points for the audio processing circuitry.
- A1-A2-A3, etc. on Large Signal Panel: Test points for the audio amplifiers.
- C1-C2-C3, etc.: Test points for the control circuitry.
- T1-T2-T3, etc.: Testpoints for the teletext circuitry.
- SC1-SC2-SC3, etc.: Test points for the Scavem circuitry.

The numbering is done in a for diagnostics logical sequence; always start diagnosing within a functional block in the sequence of the relevant test points for that functional block.

5.2 Service modes, Dealer Service Tool and ComPair

For easy installation and diagnosis the dealer remote control RC7150 is introduced. The RC7150 can be used for all new TV sets, including all set of the MG5.1E chassis. The RC7150 is also called Dealer Service Tool or DST. The ordering number of the DST (RC7150) is 4822 218 21232.

5.2.1 Installation features for the dealer

The dealer can use the RC7150 for programming the TV-set with presets. 10 Different program tables can be programmed into the DST via a TV-set (downloading from the GFL, MD2 or MG2.1 to the DST; see GFL, MD2 and MG2.1 service manuals) or by the DST-I (DST interface; ordering code 4822 218 21277).

For explanation of the installation features of the DST, the directions for use of the DST (4822 727 20073) are recommended (for the MG5.1E chassis, download code 4 should be used).

5.2.2 Diagnose features for the servicer

The MG5.1E sets can be put in the two service modes via the DST RC7150. These are the Service Default Mode (SDM) and the Service Alignment Mode (SAM). The SDM and SAM can also be entered by short circuiting the relevant pins on the SSP.

Service Default Mode (SDM)

Specification of the SDM:

- Tuning frequency 475.25 MHz.
- TV-system for BGLM sets set to BG, for BGLL'I sets to LL'.
- All picture settings at 50% (brightness, colour, contrast, HUE).
- All sound settings at 50% except volume at 25% (so bass, treble, balance at 50%, volume at 25%).
- All service-unfriendly modes are disabled (like sleep timer, child lock, blue mute).

Entering the SDM can be done in 2 ways:

- By the "DEFAULT" key on the DST while the set is in the normal operation mode.
- By short-circuiting for a moment the two pins (pin 2 and 3 of connector 0356) on the component side of the SSP with the indication "SDM" (activation can be performed in all modes except when the set has a problem with the main-processor).

Note: If the SDM is entered via the pins, all the protections are de-activated.

Exiting the SDM can only be done via the STANDBY command. By switching off-on the set with the mains switch the MG5.1E will come up again in the SDM.

Service Alignment Mode (SAM)

Specification of the SAM:

- Software alignments (see chapter 8).
- Option settings (see chapter 8).
- Error buffer reading and erasing. The most recent error code is displayed on the left side.
- Operation counter.
- Software version.

Entering the SAM can be done in 2 ways:

- By the button on the DST while the set is in the normal operation mode (or SDM). Enter the password '3-1-4-0' and press OK.
- By short-circuiting for a moment the two pins (pin 1 and 2 of connector 0356) on the component side of the SSP with the indication "SAM" (activation can be performed in all modes except when the set has a problem with the microprocessor).

Note: If the SAM is entered via the pins, all protections are de-activated.

Exiting the SAM can be done via the MENU command or via switching off-on the set with the mains switch.

Customer Service Mode (CSM)

All MG5.1E sets are equipped with the 'Customer Service Mode' (CSM). This 'Customer Service Mode' is a special service mode which can be activated and deactivated by the customer upon request of the service technician/dealer during a telephone conversation in order to identify the status of the set. This CSM is a 'read only' mode, therefore modifications in this mode are not possible.

Switching-on of the Customer Service Mode

The Customer Service Mode will switch-on after pressing simultaneously the "MUTE" knob on the remote control handset and the "MENU" button on the TV for at least 4 seconds. This activation only works if there is no menu on the screen.

Switching-off the Customer Service Mode

The Customer Service Mode will switch-off after pressing any key of the remote control handset (with exception of the "cursor-up" and "cursor-down" keys), or the buttons on the TV or by switching off the TV set with the mains switch.

Detailed explanation of the Customer service Mode
After switching on the Customer Service Menu the following screen will appear:

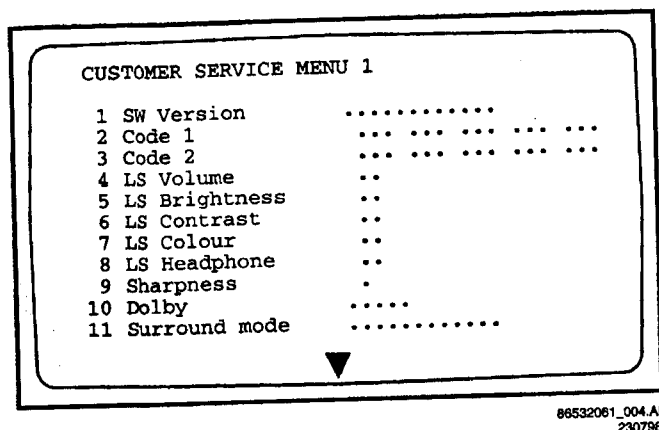


Figure 5-1 Customer Service Menu 1

Line 1: Software version; the build in software version (AAAABCX.Y)

- AAAA= MG21(chassis name)
- B = E (Europe)
- C = 1 (language cluster)
- X = main version number
- Y = sub version number

Details on the software version can be found in the chapter "Software Survey" of the publication "Product Survey - Colour Television".

Line 2: Code 1; gives the last 5 errors of the error buffer.
As soon as the built-in diagnose software has detected an error the buffer is adapted.

Line 3: Code 2; gives the first 5 errors of the error buffer.
As soon as the built-in diagnose software has detected an error the buffer is adapted.
The last occurred error is displayed on the leftmost position of code 2. Each error code is displayed as a 3 digit number. When less than 10 errors occur, the rest of the line(s) is(are) empty. In case of no errors the text "No Errors" is displayed. See paragraph 5.3 of this chapter for a description of the error codes.

Line 4: LS Volume; gives the Last Status of the volume as set by the customer for this selected transmitter.
The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Volume values can be changed via the volume key on the remote control handset.

Line 5: LS Brightness; gives the Last Status of the brightness as set by the customer for this selected transmitter.
The value can vary from 0 (brightness is minimum) to 63 (brightness is maximum). Brightness values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "brightness".

Line 6: LS Contrast; gives the Last Status of the contrast as set by the customer.
The value can vary from 0 (contrast is minimum) to 63 (contrast is maximum). Contrast values can be changed via "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "contrast".

Line 7: LS Colour; gives the Last Status of the colour saturation, as set by the customer.

The value can vary from 0 (colour is minimum) to 63 (colour is maximum). Colour values can be changed via "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "colour".

Line 8: LS Headphone; gives the Last Status of the headphone volume, as set by the customer.

The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Headphone volume values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu and selecting "headphone".

Line 9: Sharpness; gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum).

In case of bad antenna signals a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "sharpness".

Line 10: Dolby; indicates whether the received transmitter transmits Dolby sound (present) or not (not present).

Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is therefore received without a Dolby Signalling bit, then this indicator will show "not present" even though such a Dolby transmission is received.

Line 11: Surround Mode; indicates the by the customer selected surround mode.

In case the set is a Non-Dolby set there will be displayed "0". If it is a Dolby-set then is displayed: "Pro Logic", "Dolby 3 Stereo", "Hall" or "Off". For Dolby-set surround mode can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu and selecting "Surround settings".

By means of the "cursor-down" knob on the remote control handset the Customer Service Menu 2 will appear. By means of the "cursor-up" knob on the remote control handset the Customer Service Menu 1 will appear again.

Customer Service Menu 2 represents following information:

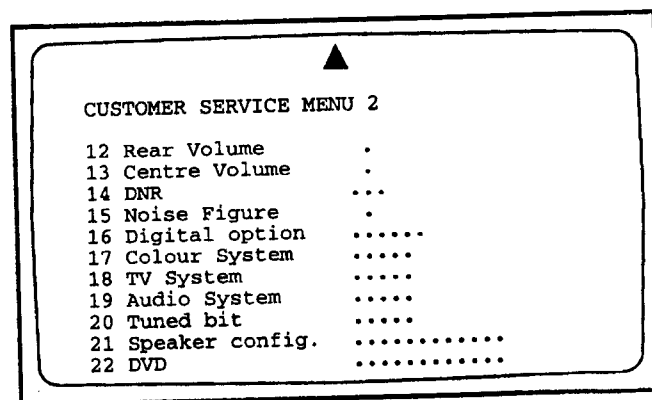


Figure 5-2 Customer Service Menu 2

Line 12: Rear Volume; gives the volume value of the surround sound loudspeakers.

This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing

the green button for sound menu, selecting "Surround settings" and selecting "Rear volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Hall".

Line 13: Centre Volume; gives the volume value of the centre loudspeakers. This value can vary from 0 (minimum volume) to 63 (maximum volume). Centre volume can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu, selecting 'Dolby Pro Logic' and selecting "centre volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Dolby 3 Stereo".

Line 14: DNR (Dynamic Noise Reduction); gives the setting of the DNR for the selected transmitter. The following selections are possible:

- "off", "min", "med" or "max"
- "off" or "automatic" (MG5.1E with "Automatic Noise Reduction").

The DNR can be changed via the "DNR" key on the remote control handset.

Line 15: Noise Figure; gives the selected noise ratio for this selected transmitter.

This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal). This only works in case the DNR selection is "off/automatic".

Line 16: Digital Option; gives the selected digital mode, "100Hz", Digital Scan" or "Natural Motion". Digital option can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "digital options".

Line 17: Colour System; gives information about the colour system of the selected transmitter.

- Black and white: No colour carrier received
- PAL: PAL signal received
- SECAM: SECAM signal received
- NTSC: NTSC signal received

Line 18: TV System; gives information about the video system of the selected transmitter.

- BG: BG signal received
- DK: DK signal received
- I: PAL I signal received
- L: SECAM L signals received
- M38.9: NTSC M signal received with video carrier on 38.9 MHz
- MN: NTSC M signal received

Line 19: Audio System; gives information about the audio system of the selected transmitter.

- Sound Muted: No sound
- Dolby Pro Logic: Dolby Pro Logic sound received
- Mono: Mono sound received
- Stereo: Stereo sound received
- Dual I: Language I received
- Dual II: Language II received
- Digital Mono: Digital mono sound is received
- Digital Stereo: Digital stereo sound is received
- Digital Dual I: Digital language I is received
- Digital Dual II: Digital language II is received

Line 20: Tuned Bit; gives information about the tuning method of the stored preset.

If the value is "Yes" the preset is stored via manual entry of the frequency when a transmitter was not present on that frequency. In that case the TV will attempt to perform a micro-search every time the preset number is selected. Once the micro-search has been successful the Tuned Bit will be set to "No".

Line 21: Speaker configuration; gives the configuration setting for the speakers.

In case the set is a Non-Dolby set there will be displayed "0". If it is a Dolby-set then is displayed: "Full internal", "L/R external", "Surround external" or "Full external". For the Dolby-set the speaker configuration can be changed via the "cursor left" and "cursor right" keys on the remote control handset after opening the installation menu and selecting "set-up". The installation menu can be opened by pressing "timer" and "enlarge" at the same time. This feature is only available when the set has virtual Dolby.

Line 22: DVD; gives the configuration setting for DVD. This can be "Present" or "Not Present".

If "Present" is selected the starting point is a top quality signal and a number of settings are therefore changed automatically. DVD can be changed via the "cursor left" and "cursor right" keys on the remote control handset after opening the installation menu and selecting "set-up". The installation menu can be opened by pressing "timer" and "enlarge" at the same time.

Problems and solving tips

The procedures to change the value or the status of the different settings is described in the paragraph 'Detailed explanation of the Customer Service Mode'.

Picture problems

Worse picture quality in case of DVD pictures Check line 22 "DVD". In case line 22 gives the indication "Not Present" change the setting into "Present".

Snowy/noisy picture

1. Check line 15 "Noise Figure". In case the value is 127 or higher and the value is also high on other programs check the aerial cable/aerial system.
2. Check lines 9 "Sharpness", 14 "DNR" and 15 "Noise Figure". In case the value of line 9 is 3 or 4 and the value of line 15 is high (127 or higher), lower the value of line 9 "sharpness" and switch DNR (line 14) to "automatic", "on" or to a higher value.

Picture too dark

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "LS Brightness" and 7 "LS Contrast". The value of line 6 is low (<10) or the value of line 7 is low ((10). Raise the brightness value or raise the contrast value.

Picture too bright

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "LS Brightness" and 7 "LS Contrast". The value of line 6 is high (>40) or the value of line 7 is high ((50). Reduce the brightness value or raise the contrast value.

Fading picture

Digital scan effect. Check line 14 "DNR". The status of "DNR" is 'med' or 'max'. Reduce "DNR" to 'min' or switch off the digital scan.

White line around picture elements and text

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
3. Check line 8 "Sharpness". Reduce the sharpness value. The new value(s) are automatically stored for all TV channels

No picture.

Check line 20 "Tuned bit". In case the value is 'Yes', install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation.

Blue picture. No proper signal is received.

Check the aerial cable/aerial system.

Blue picture and/or unstable picture.

A scrambled or decoded signal is received.

Black and white picture.

Check line 5 "LS colour". In case the value is low ((10) raise the value of colour. The new value(s) are automatically stored for all TV channels.

No colours/colour lines around picture elements.

1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'M 38,9', the installed system for this preset is 'USA', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.
2. In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.

No colours/noise in picture

1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'Black and White' and line 18 is 'BG', the installed system for this preset is 'West Europe', while 'USA' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; USA'.
2. In case line 17 is 'Black and White' and line 18 is 'L', the installed system for this preset is 'France', while 'USA' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; USA'

Colours not correct.

Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.

Colours not correct/unstable picture.

Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'BG', the installed system for this preset is 'USA', while 'France' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; France'.

Unstable picture.

Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'M 38,9', the installed system for this preset is 'West Europe', while 'France' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; France'.

Menu text not sharp enough.

1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check line 7 "LS Contrast". The value of line 7 is high (>50). Reduce the contrast value.

Sound problems**No sound from left and right speaker.**

1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, raise the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Raise the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "LS Volume". The value is low. Raise the value of "Volume". The new value(s) are automatically stored for all TV channels.

Sound too loud for left and right speaker.

1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, reduce the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Reduce the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "LS Volume". The value is high. Reduce the value of "LS Volume". The new value(s) are automatically stored for all TV channels.

No sound from "centre" speaker.

Check line 12 "Centre Volume". The value is low. Raise the value of the "Centre Volume"

Sound too loud from "centre" speaker.

Check line 12 "Centre Volume". The value is high. Reduce the value of the "Centre Volume"

Diagnose Mode (only active during transmission of error codes and diagnose 99)

This mode is activated by the DIAGNOSE command on the DST for reading the error codes and erasing the error buffer by the DST even when the set is in protection and so there is no picture (assuming that the power supply and the control part are working). For activation see paragraph 5.3. The diagnose Mode is only a temporarily mode (the set will go back to the previous mode), and can not be switched on permanently. Note: The diagnose mode can not be entered if the SAM is activated.

ComPair

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the DST service remote control allowing faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding how to repair the MG5.1E in short time by guiding you step by step through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself; ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the MG5.1E (when the micro processor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan MG5.1E electronic manual, schematics and PCBs are only a mouse-click away.

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable. In case of the MG5.1E chassis, the ComPair interface box and the television communicate with each other via bi-directional infrared signal.

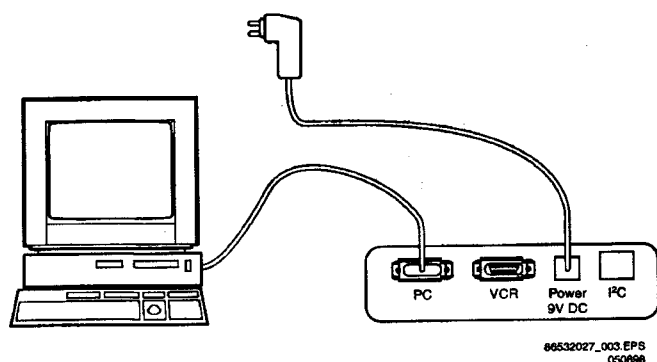


Figure 5-3

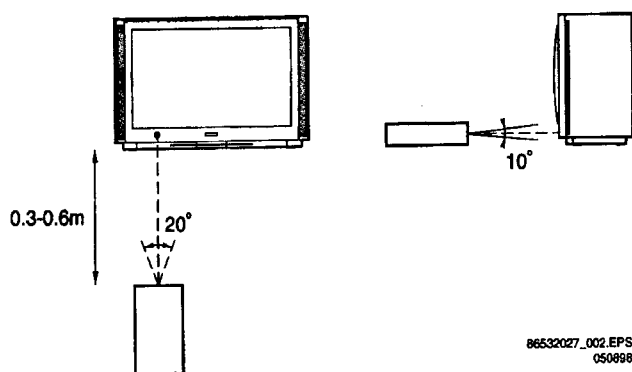


Figure 5-4

The ComPair fault finding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in 2 ways:

1. Communication to the television (automatic)
2. Asking questions to you (manually)

ComPair combines this information with the repair information in its database to find out how to repair the MG5.1E.

Automatic information gathering

Step-by-step start up. Under normal circumstances, a fault in the power supply or an error during start-up will switch the

television to protection-mode. ComPair can take over the initialisation of the television. In this way it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem.

Reading out the error buffer, ComPair can automatically read out the contents of the entire error buffer.

Diagnosis on I2C level. ComPair can access the I2C bus of the television without a physical connection. ComPair can send and receive infrared commands to the micro controller of the television. These commands are translated by the controller to I2C commands and vice versa. In this way it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the MG5.1E.

Manual information gathering

Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extent. When this is not the case, ComPair will guide you through the fault finding tree by asking you questions and showing you examples. You can answer by clicking on a link (e.g. text or an oscillogram) that will bring you to the next step in the faultfinding process.

A question could be: Do you see snow? (Click on the correct answer)

YES / NO

An example can be: Measure testpoint I7 and click on the correct oscillogram you see on the oscilloscope

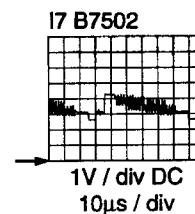


Figure 5-5

By a combination of automatic diagnostics and an interactive question/answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Additional features

Beside fault finding, ComPair provides some additional features like:

- Uploading/downloading of presets
- Managing of preset lists
- Emulation of the Dealer Service Tool

SearchMan (electronic service manual)

When ComPair is installed in combination with SearchMan, all schematics and PCBs will be directly available while you repair a television if you click on a PCB or schematic link.

Example: Measure the DC voltage on C2568 (PCB/schematic) on the small signal level.

Clicking on PCB will automatically pop-up a picture of the PCB with the location of C2568 marked. Clicking on schematic will automatically pop-up the schematic with the location of C2568 marked.

5.3 Error codes

5.3.1 Reading error codes from the error buffer

The error buffer can be read in 2 ways:

1. On the screen via the Service Alignment Mode (SAM). In case picture is OK, the error buffer can be read easiest via

the SAM. In the main menu of the SAM the last 10 different error codes occurred are displayed. The most recent detected error code is displayed on the left side, so e.g.:
 0 0 0 0 means no error codes present in the buffer
 3 0 0 0 means one error code present in the buffer; error code 3

2 3 0 0 means two error codes present in the buffer; error code 2 is the most recent, error code 3 is detected before 2

2. On the display of the DST. If an error has been detected by the MG5.1E chassis, the set might go into protection. Without the presence of a picture the errors can be read by the DST, as long as the main-processor is still active (green LED continuous and red LED blinking fast (5Hz); in case of red LED is blinking slow (1,25Hz) there is a main-processor problem). To transmit the errors from the TV to the DST:
 1. Press the "DIAGNOSE" key (in all modes except the SAM).
 2. Press "1" to view the last error detected.
 3. Hold the DST 5 to 10 cm in front of the stand-by LED of the set (the IR-sending LED of MG5.1E is located near the stand-by LED).
 4. Press the "OK" key.

The error is represented by a 2 digit number. The 2 digits on the DST are displayed sequentially, with a pause before it is repeated. The digit after the pause is the 1st digit. If the display

reads 4 - 7, the error code is 47. To read other error codes, press "DIAGNOSE" and one of the other digit keys. Note:

- If the DST cannot communicate to the MG5.1E in a proper way, ERROR 2 is shown in the display of the DST. Trying again by changing the DST position a little bit might help.
- If the error buffer of MG5.1E is empty, no errors are displayed by the DST; the display remains blank.

5.3.2 Clearing the error buffer

The error buffer can be cleared in 2 ways:

1. In the SAM by selecting the item RESET ERROR BUFFER in the main menu.
2. By the "DIAGNOSE 99" command of the DST (in all modes except the SAM). Press the DIAGNOSE key on the DST, followed by 9 and 9 and then .

Note: When error buffer is full (10 codes), no new error can be stored anymore. However of every error raised is monitored how long it exists in the error buffer. When for any reason a false raised error exists in the buffer, it will be deleted after 50 hours. If this error still is actual after 50 hours, it will be raised again. In this way is safeguarded that history of error codes is stored. Sometimes it is an option to first write down the error buffer content, reset the buffer, and look again which error codes are generated by the set.

5.3.3 Error code table

Error messages (see table)

Error	Device	Description	Defective item	Diagram	Defective module Indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source select audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF I/O
20	TDA9330H	HOP video control/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS Popov	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Cordless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX Picnic	IC7611	L1	Feature Box
53	SAA4992	FBX Falconic	IC7626	L3	Feature Box
54	SAA4997	FBX Veric	IC7621	L2	Feature Box
55	SAA4996	FBX Macpatic	IC7616	L2	Feature Box
56	83C654	MCS processor	IC7803	N3	Digital Audio Module
57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module

Error	Device	Description	Defective Item	Diagram	Defective module Indication
65	Slow I2C bus blocked		see fig 5.6	Slow I2C bus blocked	
66	Fast I2C bus blocked		see fig 5.6	Fast I2C bus blocked	
67	Supply 5V	5V2	see fig 5.5	+5 V Supply	
68	Supply 8V	8V6	see fig 5.5	+8V Supply	
70	V fail protection	VFB	fig 5.8	A3/A1/K6	Vertical Flyback
71	H fail protection	HFB	fig 5.8	A1/K6	Horizontal Flyback
73	Line Deflection protection	LDP	IC7484	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	TS7351	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	TS7762	A4	Sound Output
77	Feature box protection	FBX-PROT	Fig 5.6	L1	+3V (FBX) Supply
78	Edric protection	EDRIC-PROT	IC7750	K4	+3V (Edric) Supply
79	POPOV protection	POPOV_PROT			
80	Tuner protection	Tuner-PROT	U1102	K1	+8V (Tuner) Supply
81	UPD65654GF-260	Convergence spline processor	IC102	Convergence	Convergence panel
82	M24C32	Digital Convergence NVM	IC101	Convergence	Convergence panel
83	TDA8444	Interface I/O expander	IC7001	Interface	Interface panel

Remark: If on the DST the text "ERROR 2" is displayed, this means that the communication from the TV to the DST has failed

5.4 Fault find trees

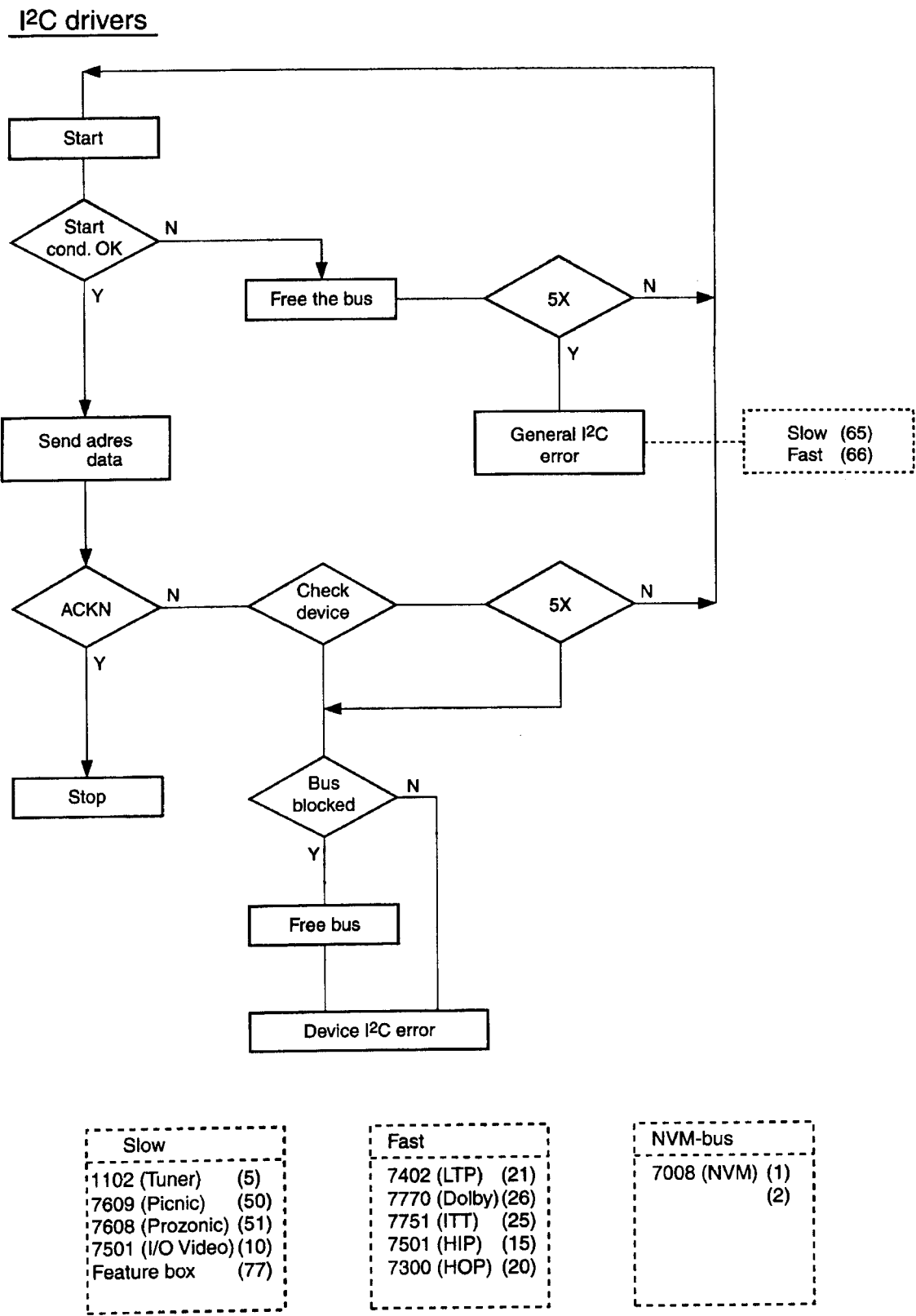


Figure 5-6

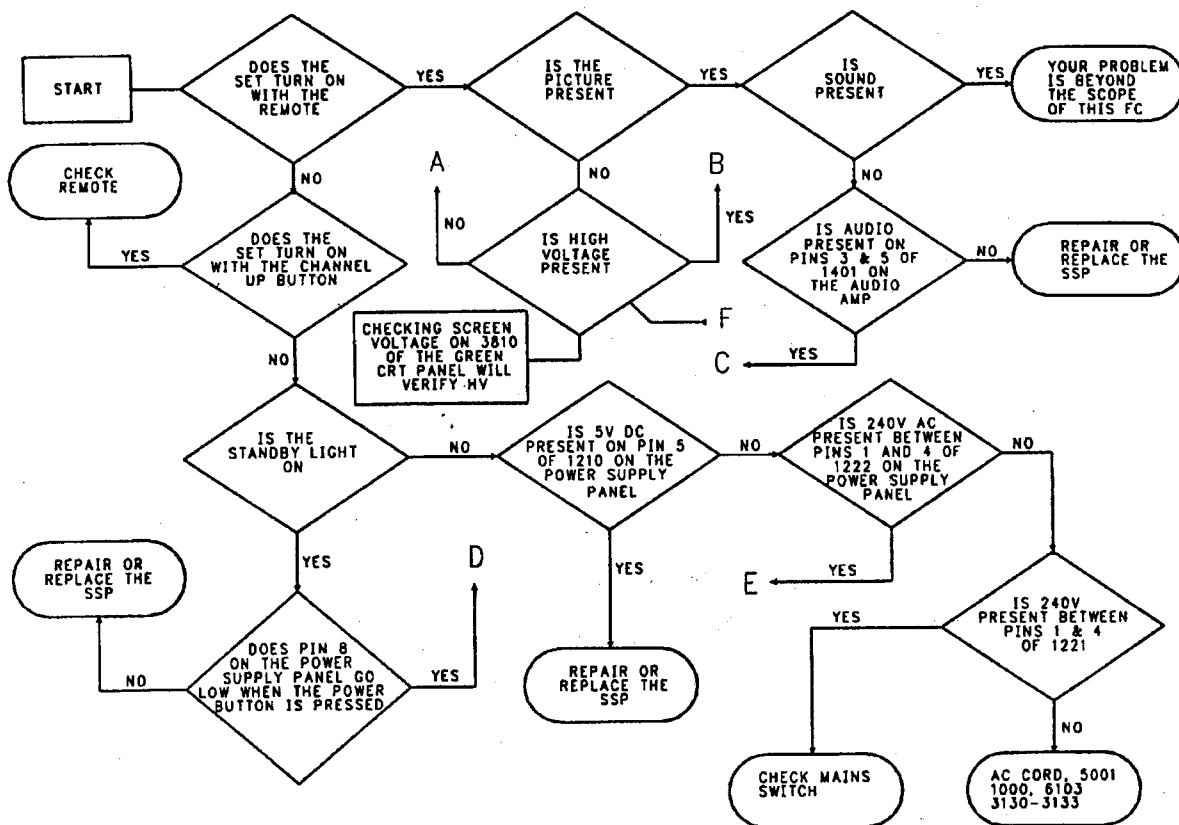
CL96532100_070.1H
141099

Figure 5-7

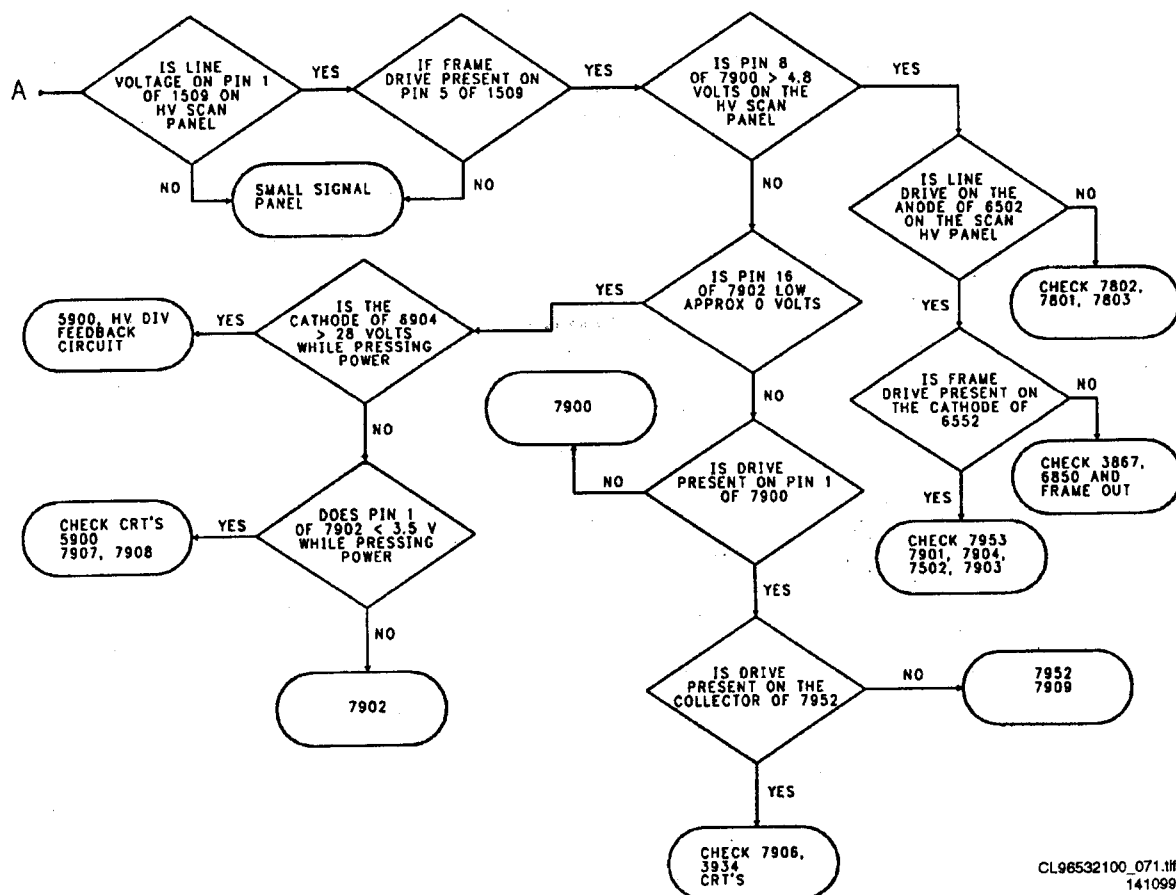
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141099

Figure 5-8

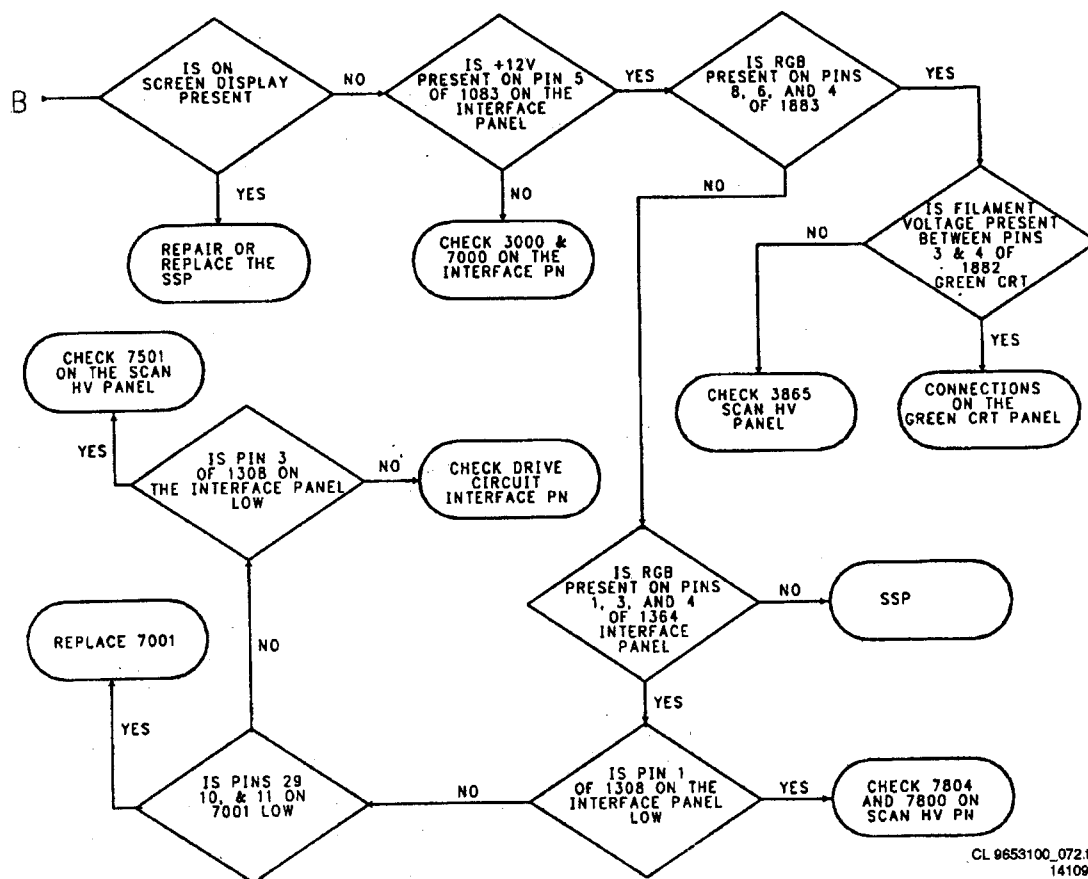


Figure 5-9

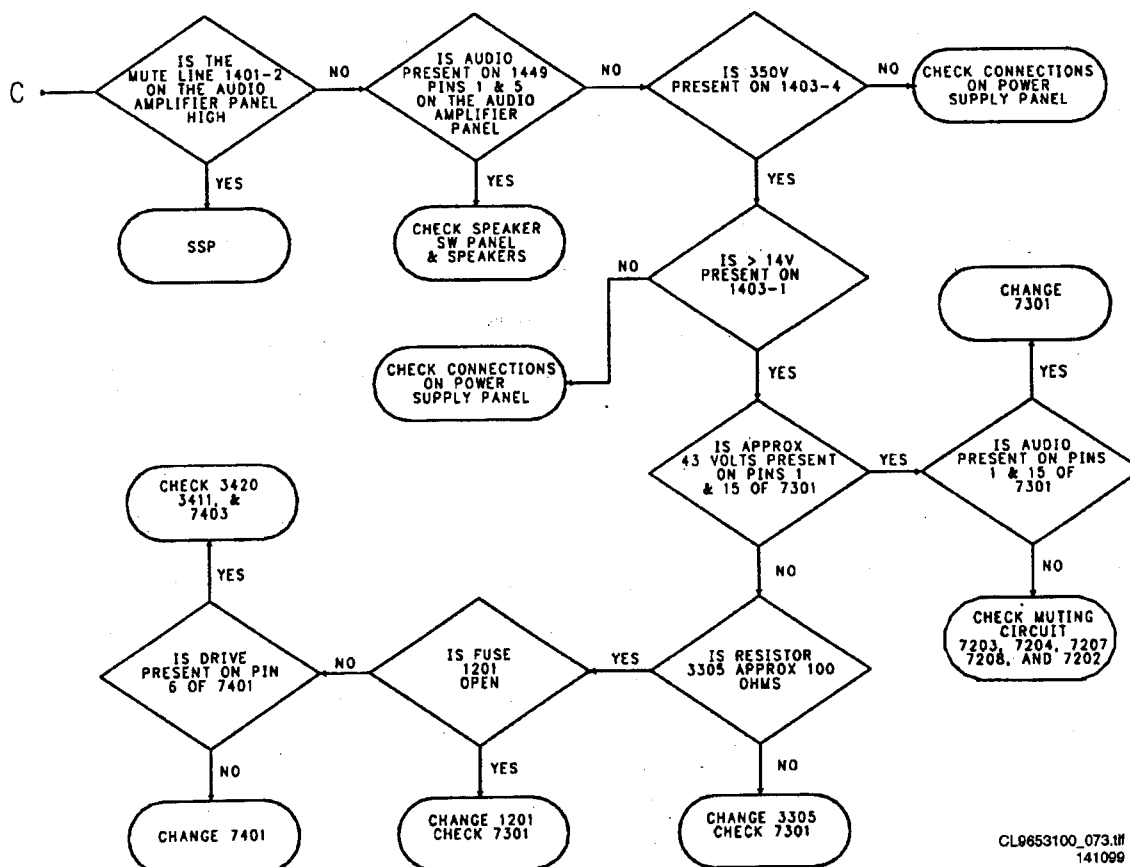


Figure 5-10

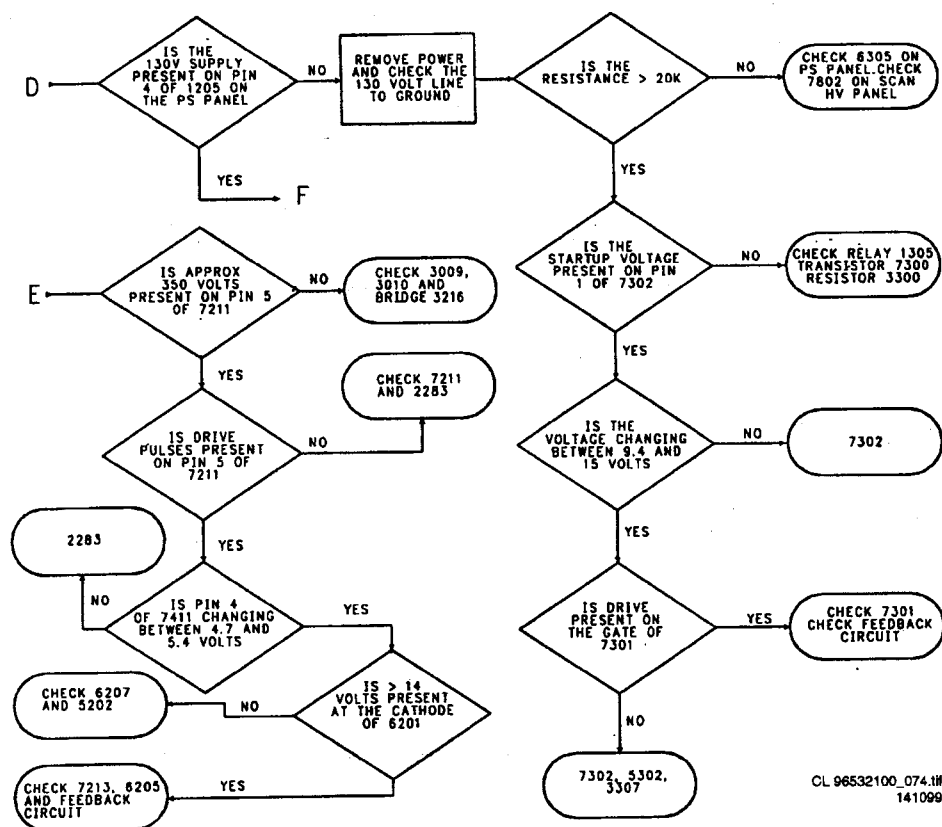


Figure 5-11

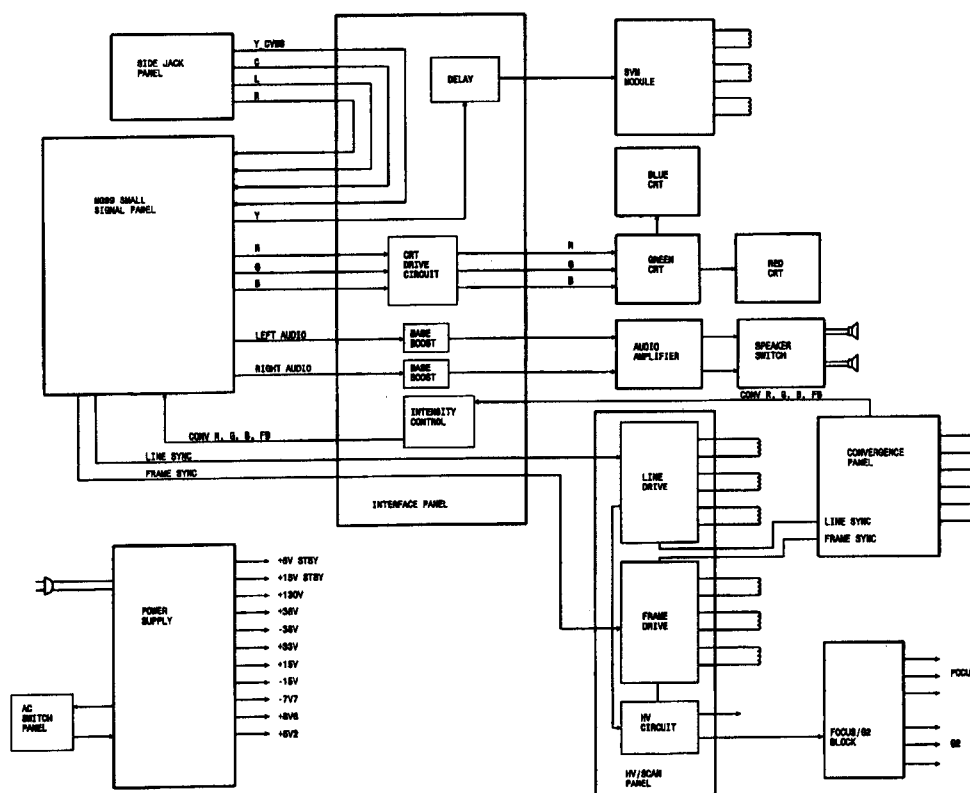
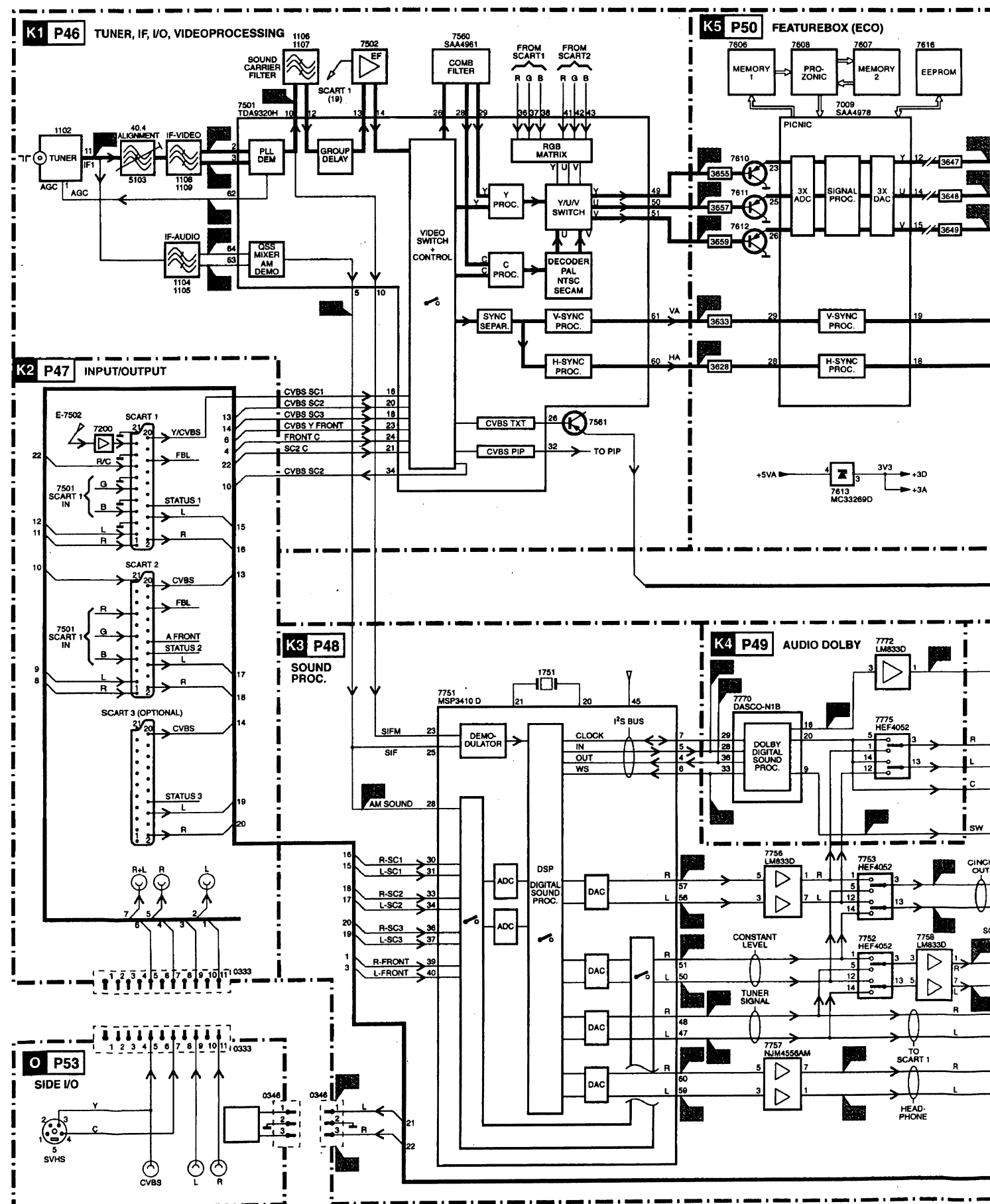
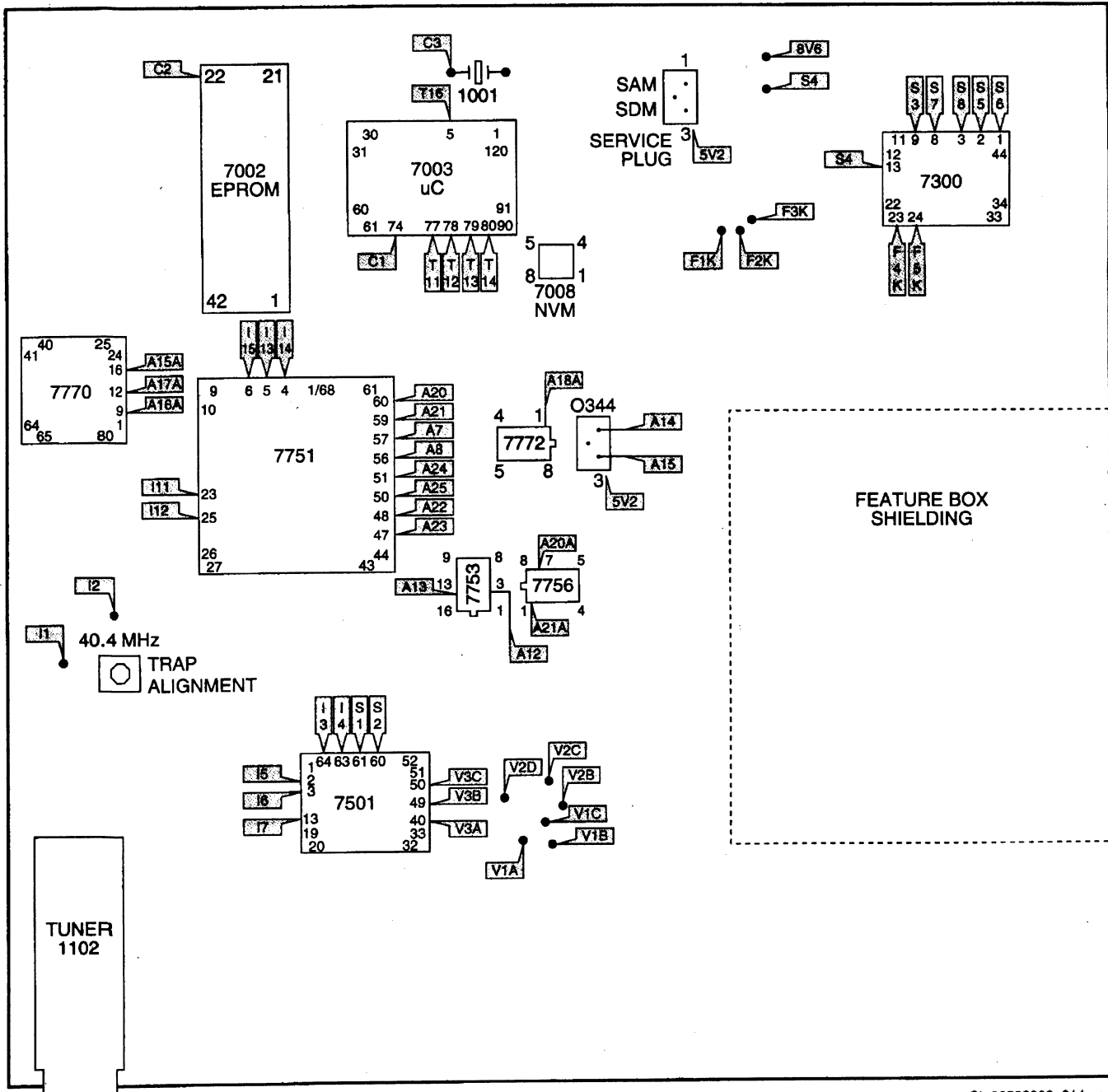
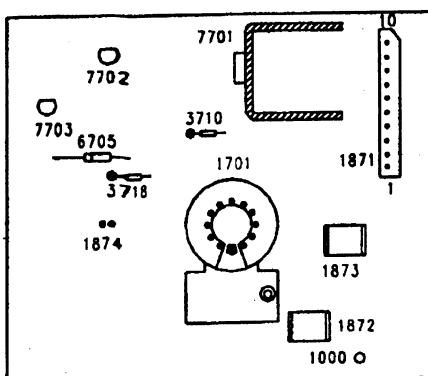


Figure 5-12

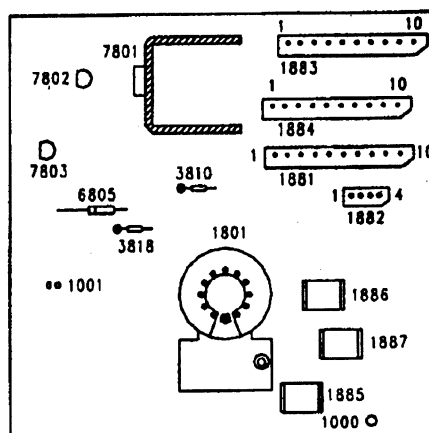




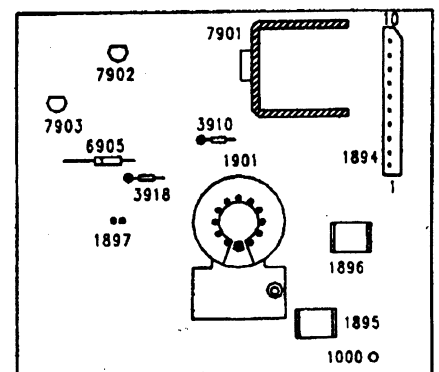
(COMPONENT-SIDE)

CL 86532092_014.eps
2011 98

RED CRT BOARD



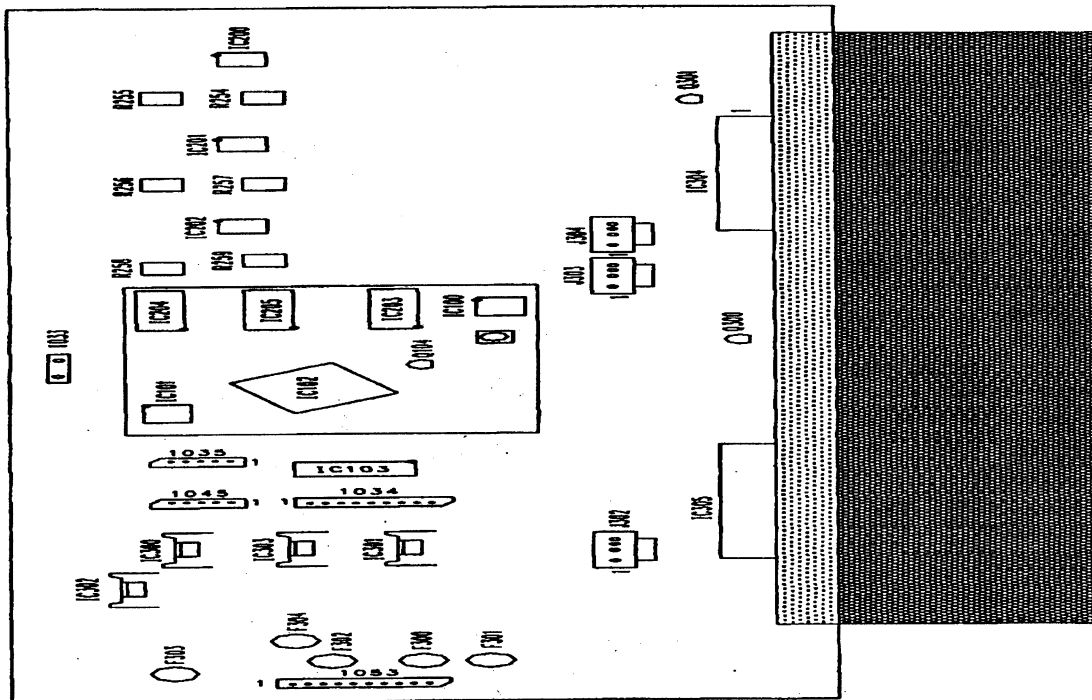
GREEN CRT BOARD



BLUE CRT BOARD

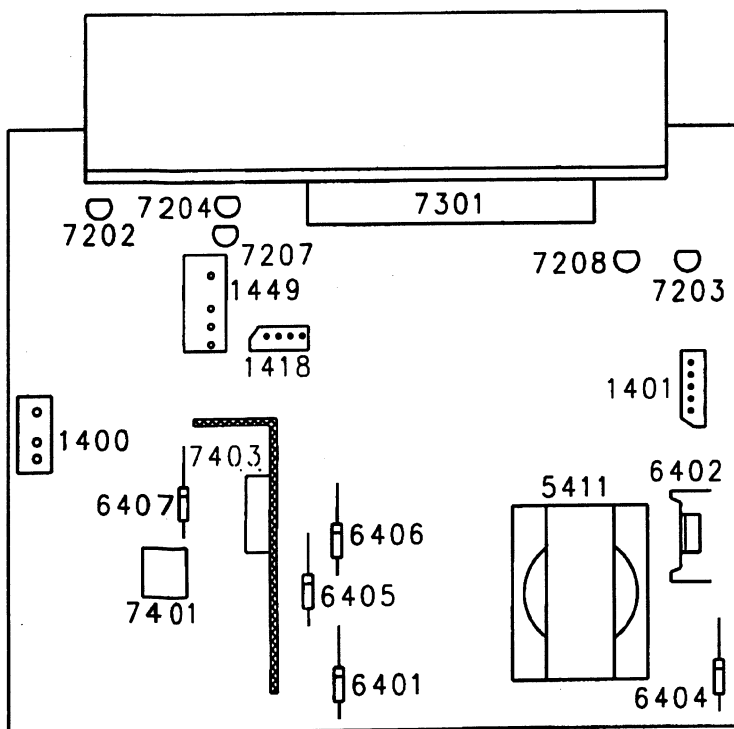
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CONVERGENCE PANEL WIRING INTERCONNECT

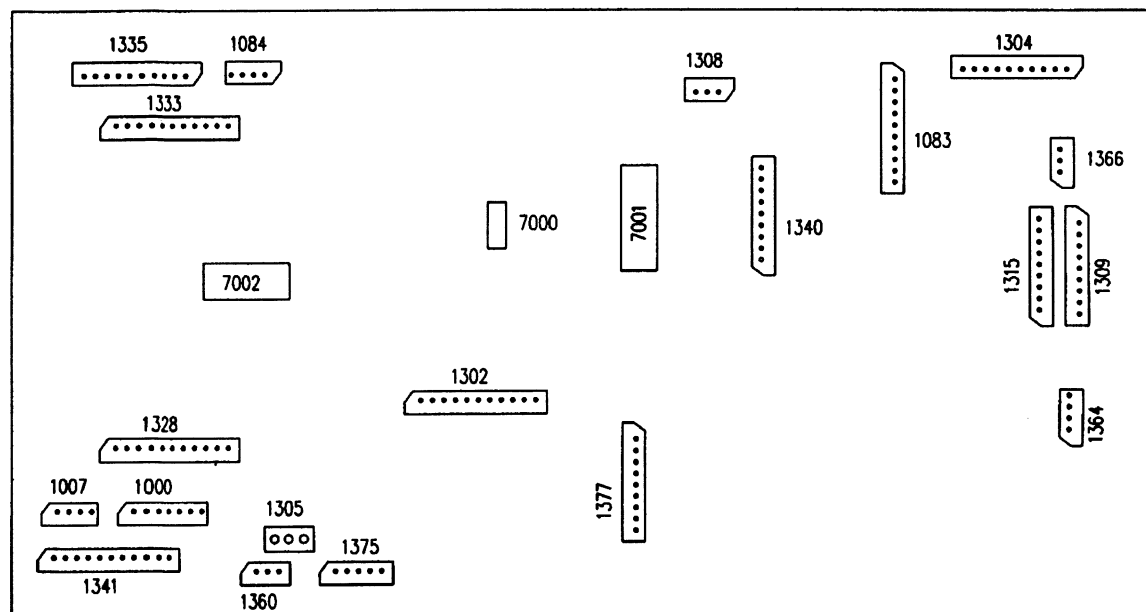
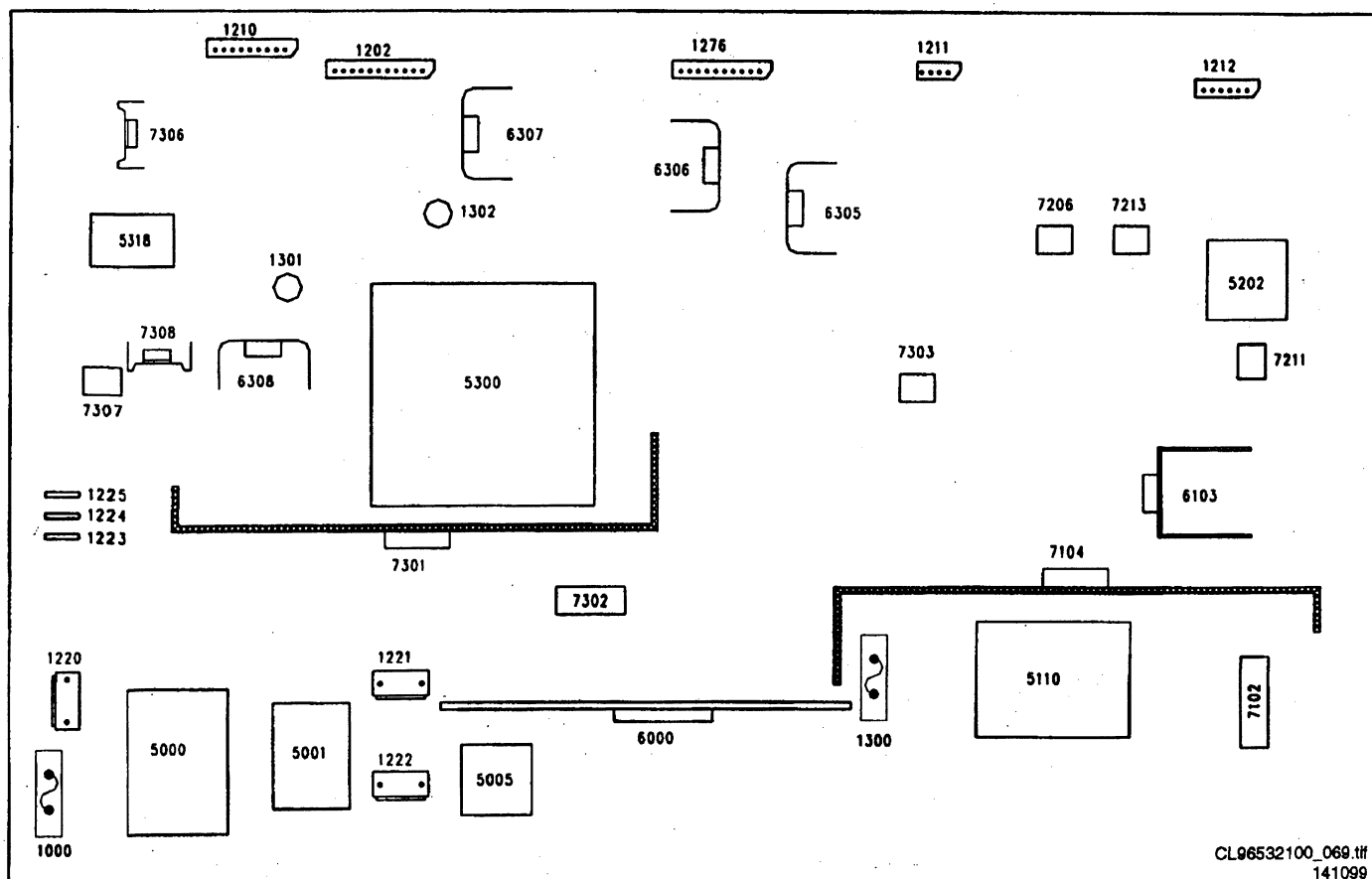


CL96532100_022
051089

AUDIO AMPLIFIER COMPONENT LOCATION



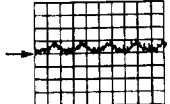
CL96532100_022.eps
051089

INTERFACE PANEL COMPONENT LOCATIONCL96532100_021.eps
051099**POWER SUPPLY COMPONENT LOCATION**CL96532100_069.tif
141099

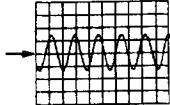
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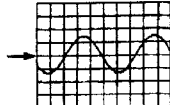
A15 HP-R/3-0344



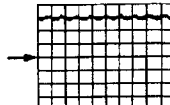
A16 SC2-R



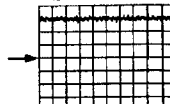
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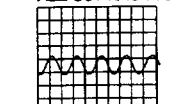
A20 R/60-7751



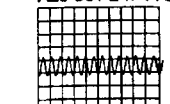
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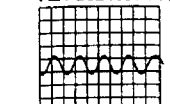
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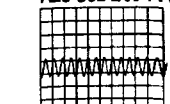
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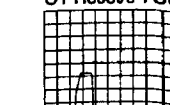
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A25 SC2-L/50-7751

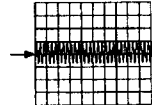


C1 Reset/c-7007

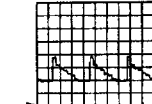


C2 +3V3

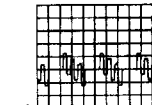
C3 6MHz/2016/1001



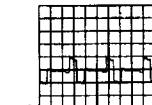
F1K Y-OUT/19-7402



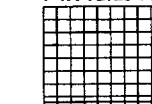
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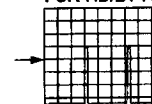
F3K V-OUT/16-7402



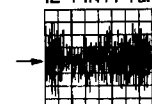
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F5K HD/24-7300



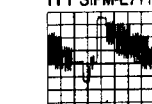
I2 PIN11-Tuner

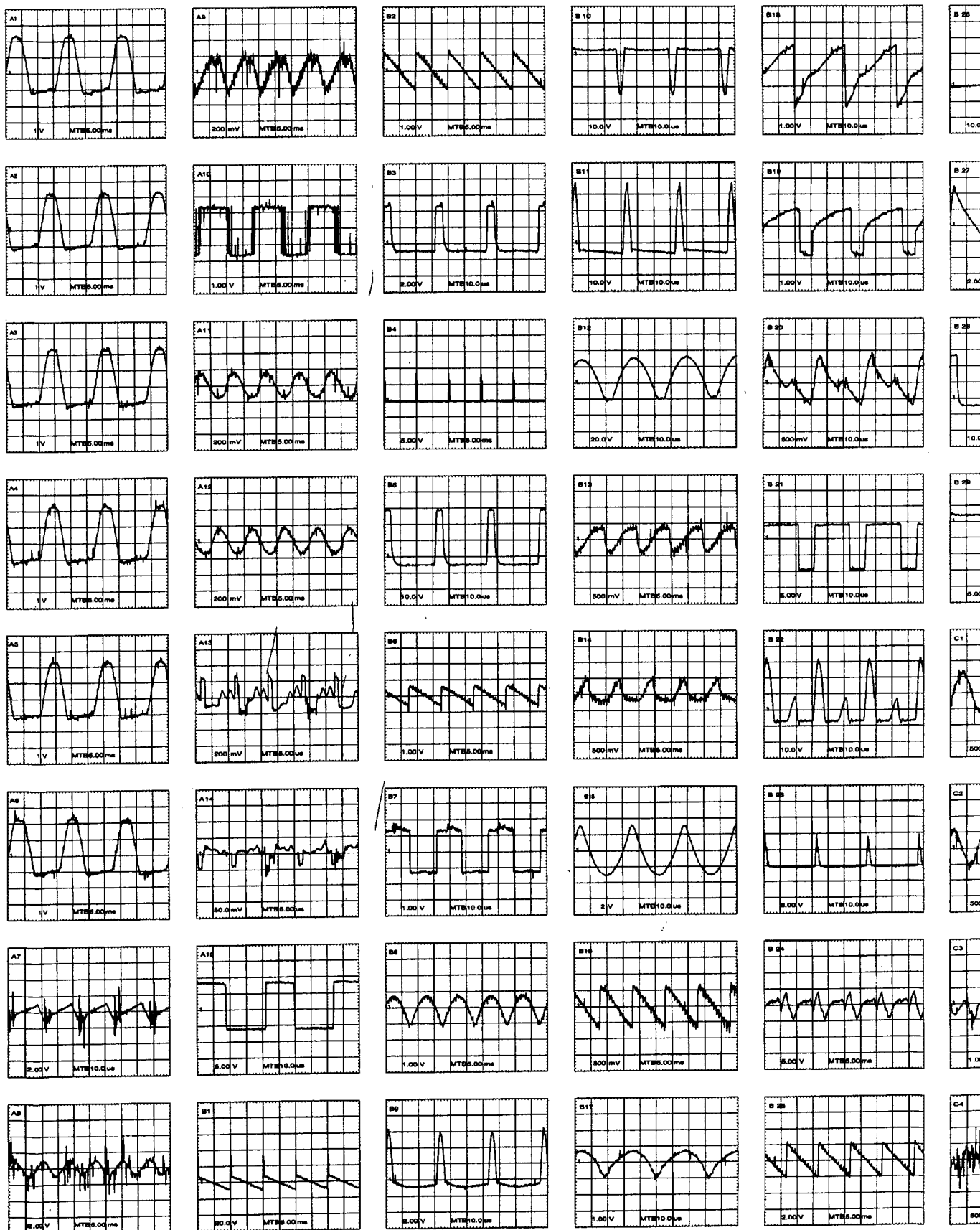


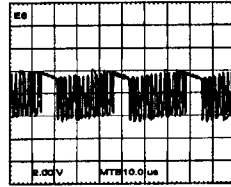
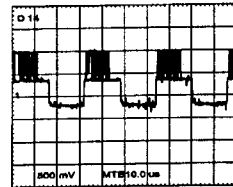
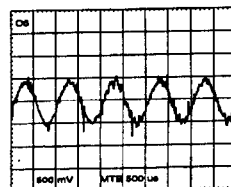
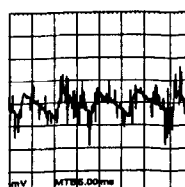
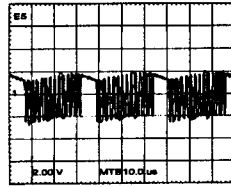
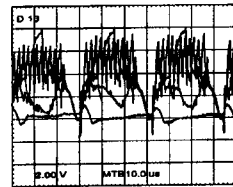
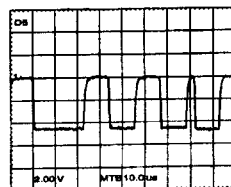
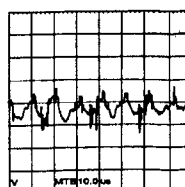
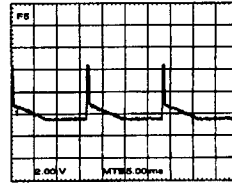
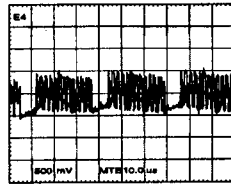
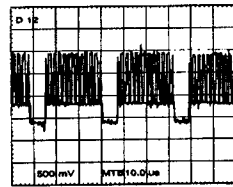
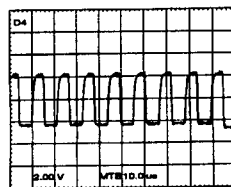
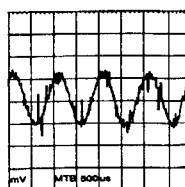
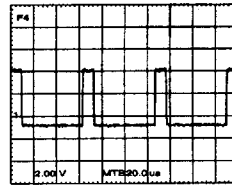
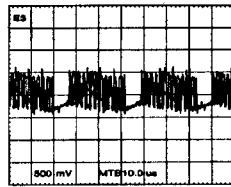
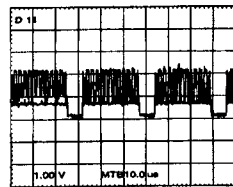
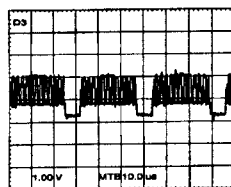
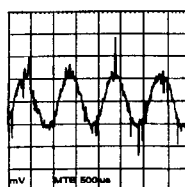
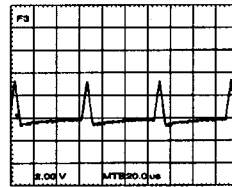
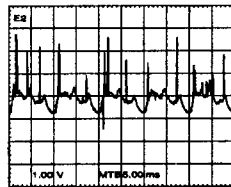
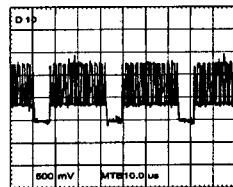
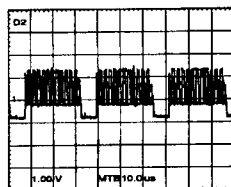
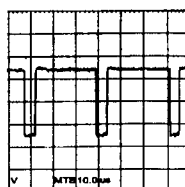
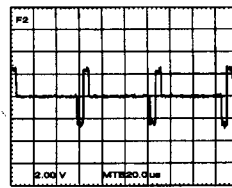
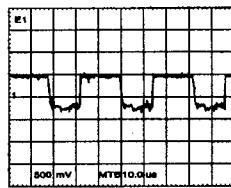
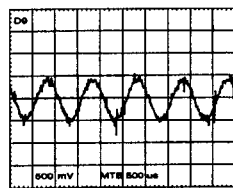
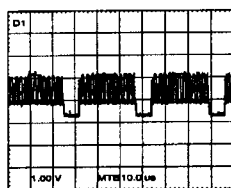
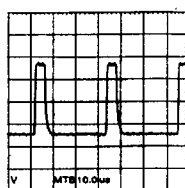
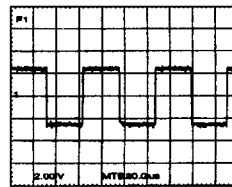
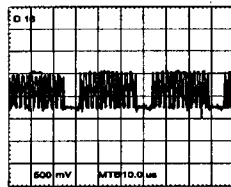
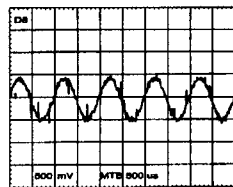
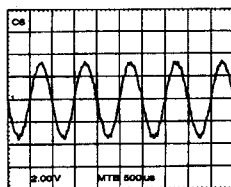
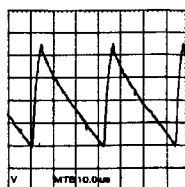
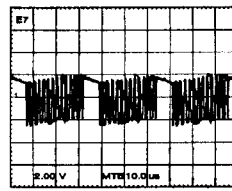
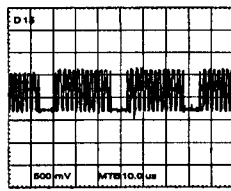
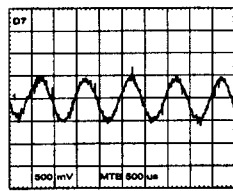
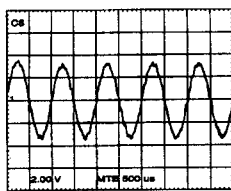
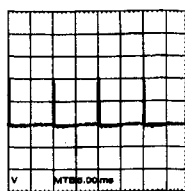
I7 B7502

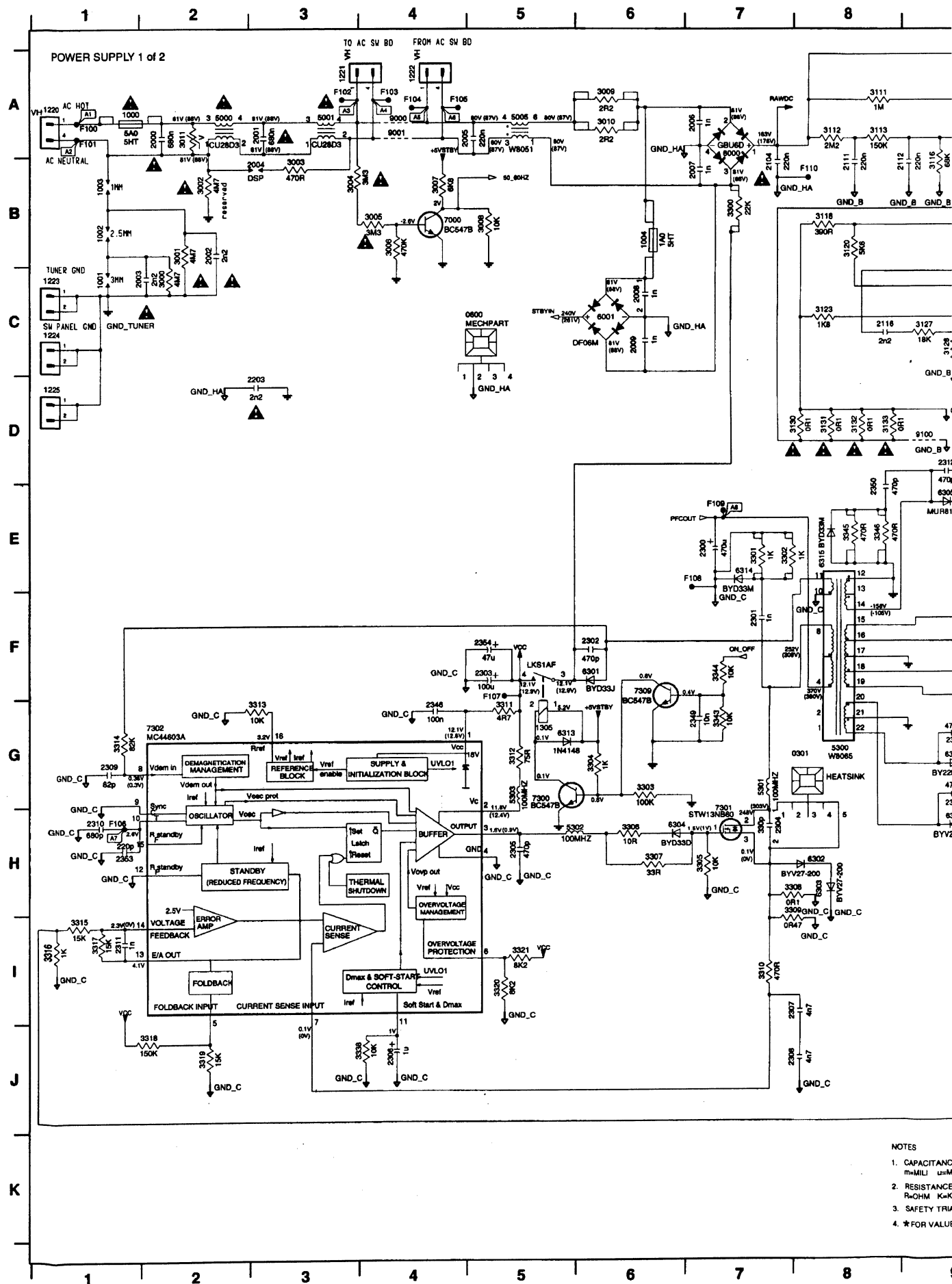


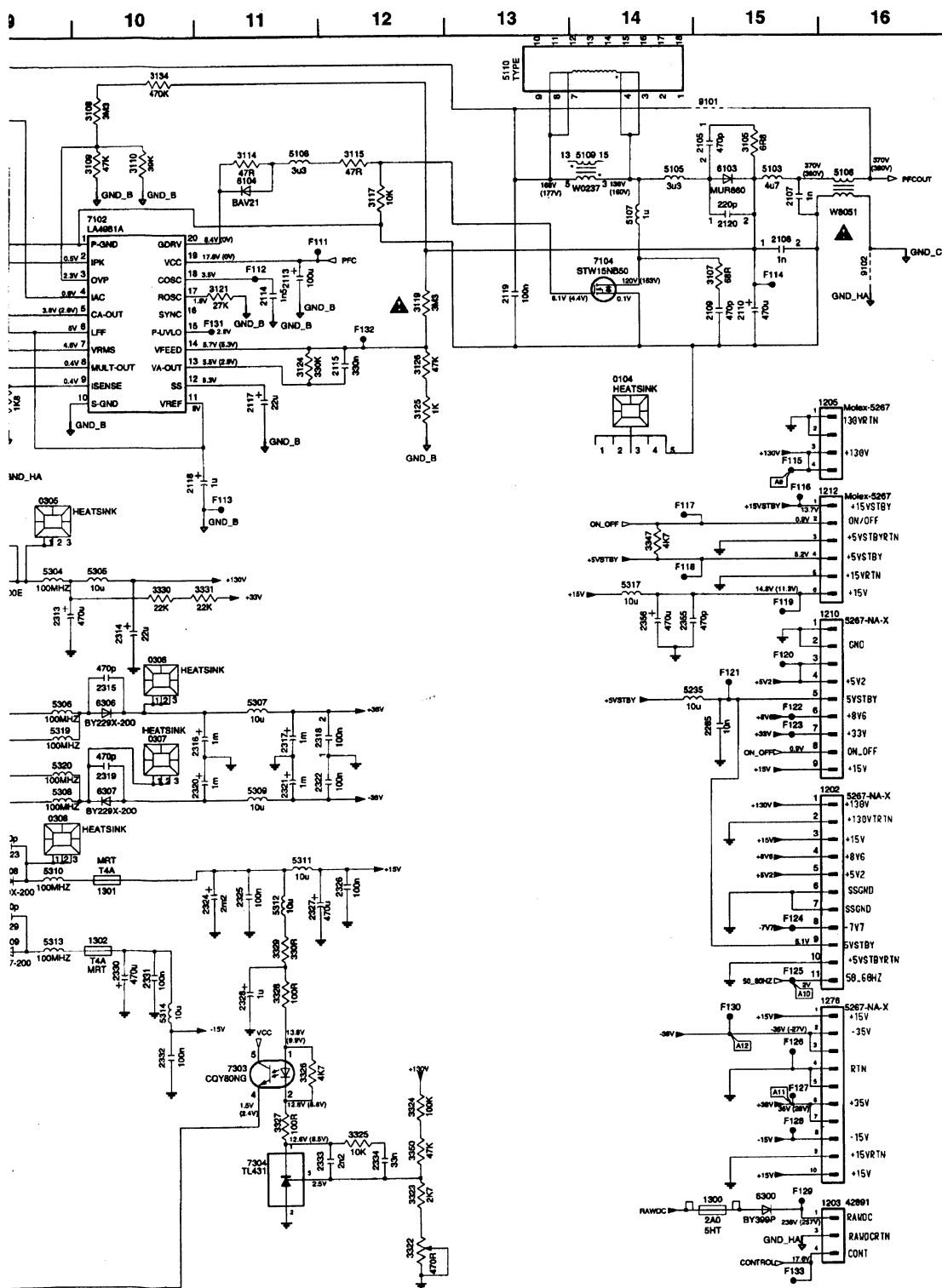
I11 SIFM-E7111





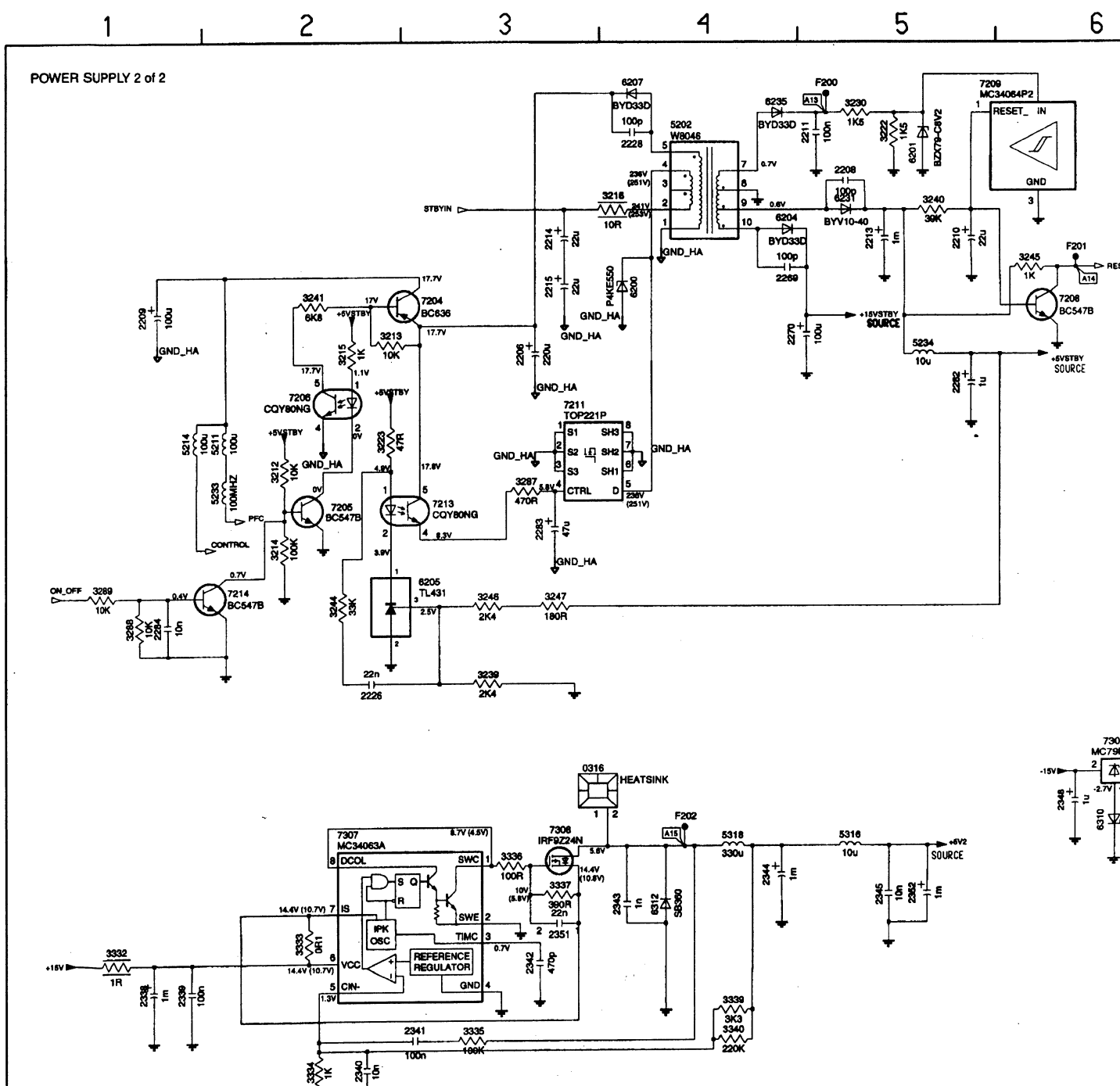






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0306 D9	3300 B7
0306 E10	3301 E7
0307 F10	3302 E7
0308 G8	3303 G6
0400 C4	3304 G6
1000 A1	3305 H7
1001 C1	3306 H6
1002 B1	3307 H6
1003 B1	3308 H7
1004 B6	3309 I7
1202 F16	3310 I7
1203 J16	3311 G5
1205 C15	3312 G5
1210 E18	3313 G3
1212 D15	3314 G1
1220 A1	3315 H1
1221 A3	3316 H1
1222 A4	3317 H1
1223 C1	3318 J2
1224 C1	3319 J2
1225 D1	3320 I5
1276 H16	3321 I5
1300 J15	3322 J12
1301 G10	3323 J12
1302 H10	3324 H12
1305 G5	3325 H12
2000 A2	3326 H11
2001 A3	3327 H11
2002 B2	3328 H11
2003 C2	3329 H11
2004 B3	3330 H10
2005 A5	3331 E11
2006 A7	3332 J4
2007 B7	3343 G7
2008 C6	3344 F7
2009 C8	3345 E8
2104 B7	3346 E8
2105 A15	3347 D14
2107 B16	3350 H12
2108 B15	5000 A2
2108 C18	5001 A3
2110 C15	5005 A5
2111 B6	5103 A15
2112 B9	5106 A14
2113 B11	5108 A16
2114 B11	5107 B11
2116 C8	5109 A14
2117 C11	5110 A14
2118 D10	5226 F14
2119 B13	5300 G8
2120 B15	5301 G7
2203 D3	5302 H6
2265 F15	5303 H5
2300 E7	5304 E9
2301 F7	5305 E10
2302 F6	5306 F9
2303 F5	5307 F11
2304 H7	5308 F9
2305 H5	5309 F11
2306 J4	5310 G9
2307 H6	5311 G11
2308 J6	5312 G11
2309 G1	5313 H8
2310 H1	5314 H10
2311 H1	5317 E14
2312 D9	5318 F9
2313 E9	5320 F9
2314 E10	6000 A7
2315 F10	6001 C6
2316 F11	6103 A15
2317 F11	6104 A11
2318 F12	6300 J15
2319 F10	6301 F5
2320 F11	6302 H6
2321 F11	6303 H6
2322 F12	6304 H6
2323 G9	6305 E9
2324 G11	6306 F10
2325 G11	6307 F10
2326 G12	6308 G9
2327 G11	6309 H6
2328 H11	6313 G5
2329 G8	6314 E7
2330 H10	6315 E7
2331 H10	7000 B4
2332 H10	7102 B10
2333 H12	7104 B14
2334 H12	7300 H5
2346 G4	7301 H7
2349 G7	7302 G2
2350 E8	7303 H11
2353 H1	7304 H11
2364 F5	7305 F8
2365 E14	9000 A4
3000 C2	9100 D9
3001 B2	9101 A15
3002 B2	9102 B16
3003 B3	F100 A1
3004 B3	F101 A1
3005 B4	F102 A3
3006 B4	F103 A4
3007 B4	F104 A4
3008 B5	F105 A4
3009 A8	F106 H1
3010 A8	F107 G5
3011 A2	F108 E7
3105 A15	F109 E7
3107 B15	F110 D8
3108 A10	F111 B11
3109 A10	F112 B11
3110 A10	F113 D11
3111 A8	F114 B16
3112 A8	F115 D15
3113 A8	F116 D15
3114 A11	F117 D14
3115 A12	F118 E14
3116 B9	F119 E16
3117 B12	F120 E16
3118 B6	F121 E15
3119 B12	F122 F16
3120 B6	F123 F15
3121 B11	F124 G15
3123 C4	F125 H15
3124 C11	F126 H15
3125 C12	F127 H15
3126 C12	F128 H15
3127 C9	F129 H15
3128 C9	F130 H15
3130 D6	F131 C11
3131 D8	F132 C12
3132 D8	F133 J16

E VALUES ARE IN FARADS:
 CRO n=NANO p=PICO f=FERMI
 VALUES ARE IN OHMS:
 LO M=MEGA G=GIGA T=TERA
 NGE REPRESENTS PCEC REPLACEMENT PART ONLY.
 SEE PARTS LIST.



7

8

a

b

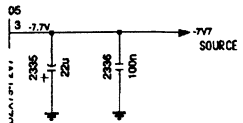
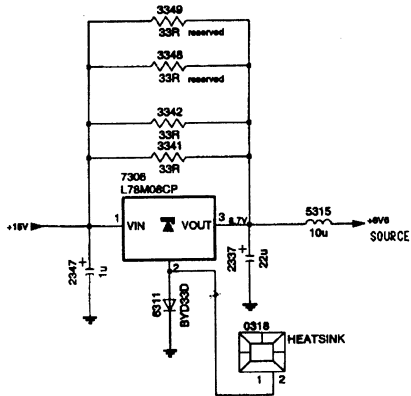
c

d

e

f

g

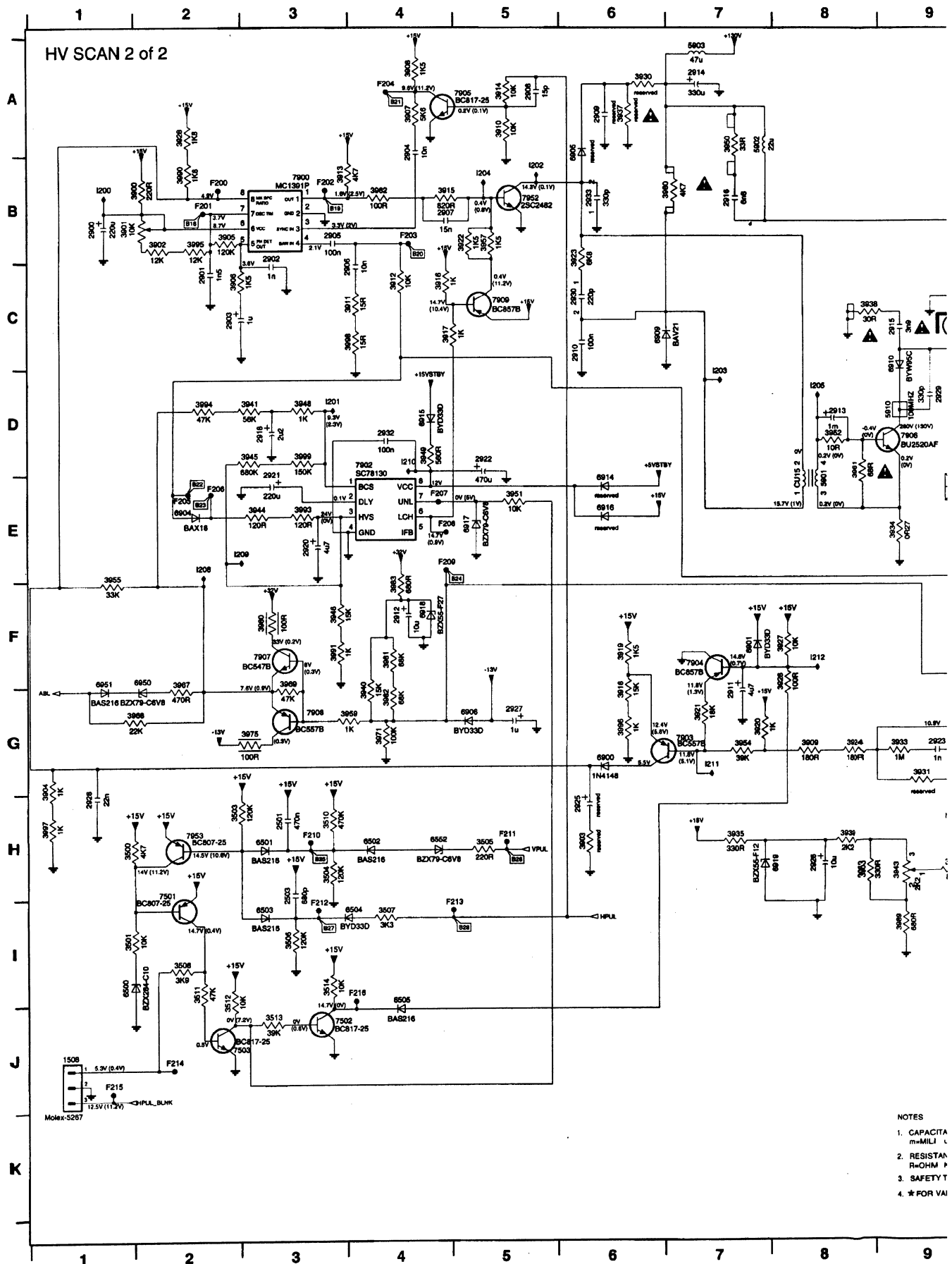


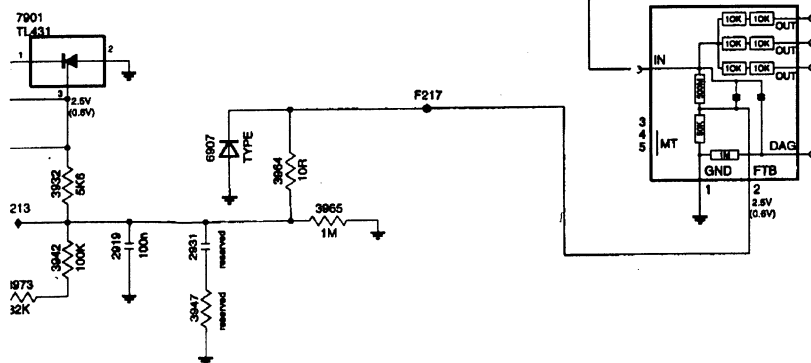
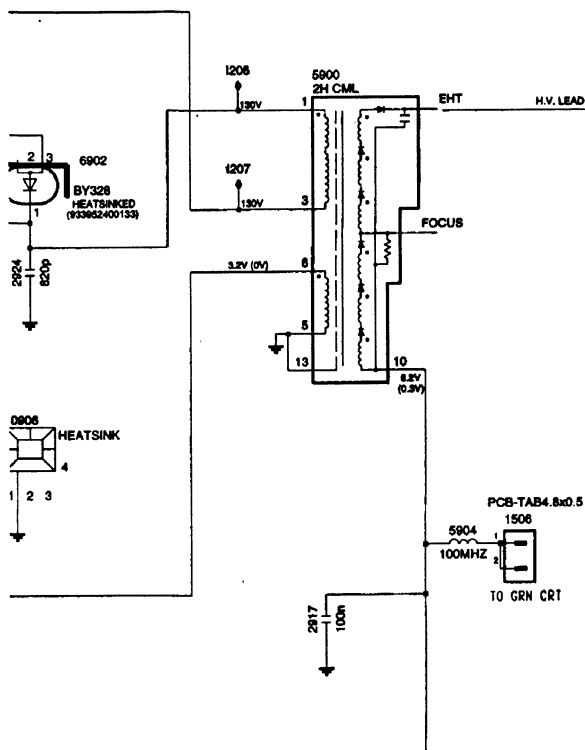
NOTES

1. CAPACITANCE VALUES ARE IN FARADS:
m=MILI u=MICRO n=NANO p=PICO f=FEMTO
2. RESISTANCE VALUES ARE IN OHMS:
R=OHM K=KILO M=MEGA G=GIGA T=TERA
3. SAFETY TRIANGLE REPRESENTS PCEC REPLACEMENT PART ONLY.
4. ★ FOR VALUE SEE PARTS LIST.

-

HV SCAN





NCE VALUES ARE IN FARADS:
 μ =MICRO n =NANO p =PICO f =FEMTO

ICE VALUES ARE IN OHMS:
K-KILO, M-MEGA, G-GIGA, T-TERA

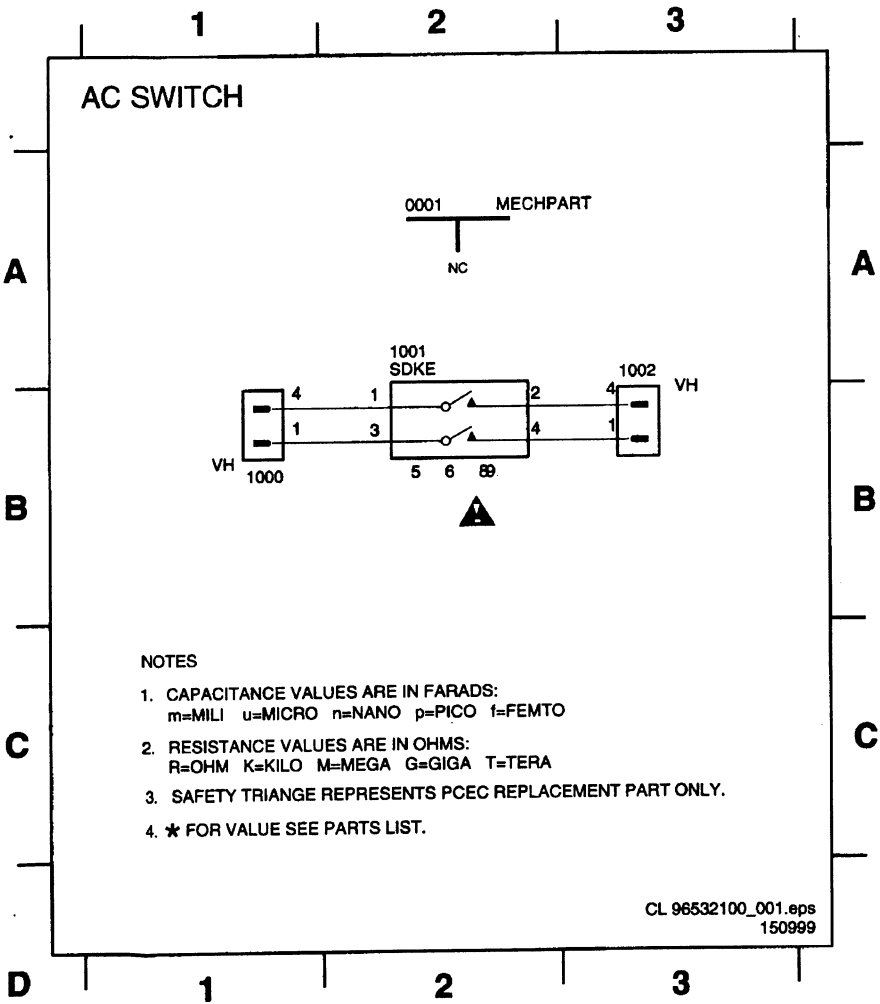
CHANGE REPRESENTS PCIEC REPLA

SEE PARTS LIST.

.02 SEE FILING DATE.

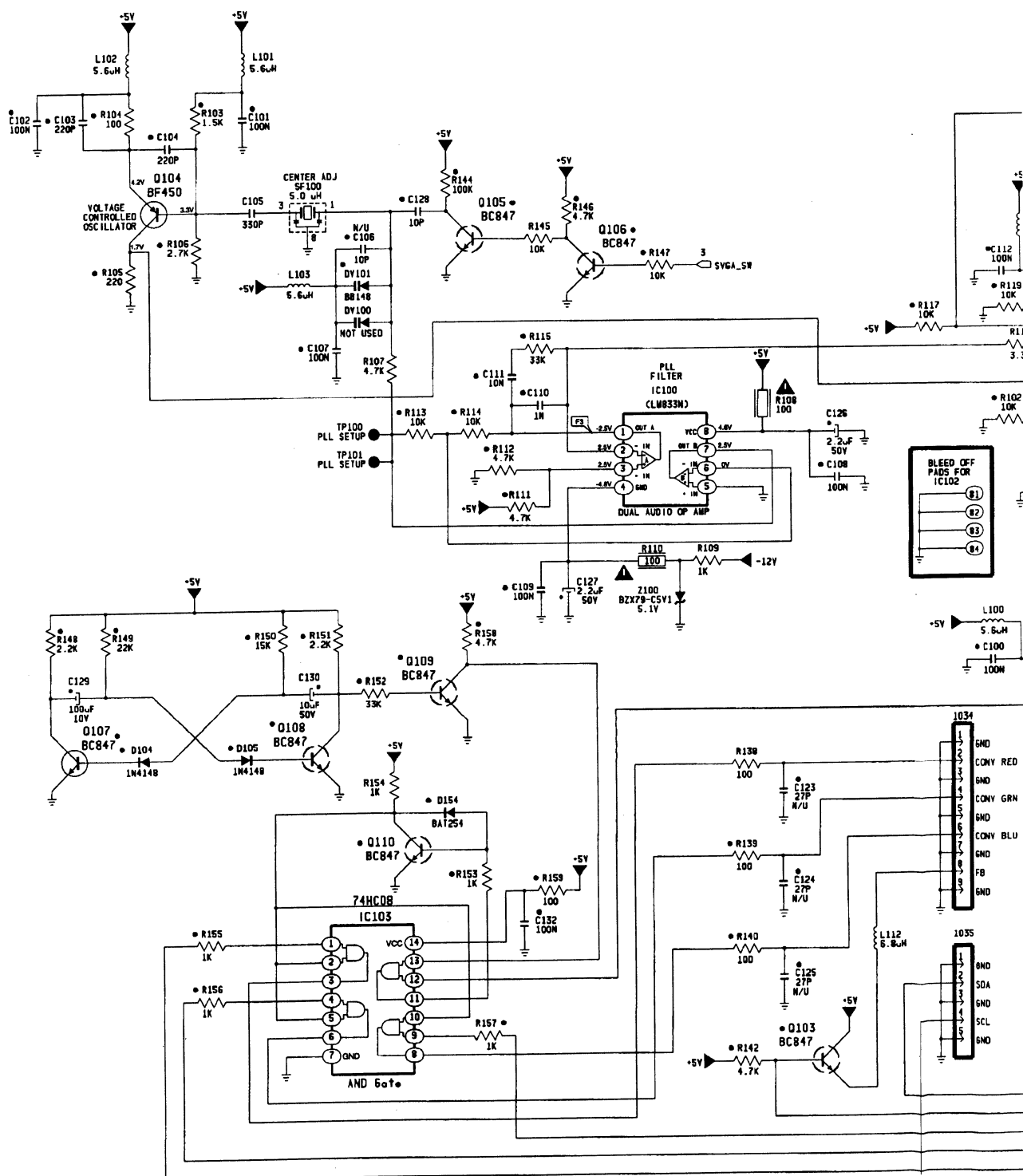
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1500 E11	5904 E12
1500 D13	5910 D9
2501 H3	6500 I1
2503 H3	6501 H3
2900 B1	6502 H4
2901 C2	6503 H3
2902 B3	6504 H4
2903 C2	6505 H4
2904 A4	6552 H4
2905 B3	6900 G6
2906 C4	6901 F7
2907 B4	6902 C10
2908 A5	6905 E2
2909 A8	6906 A6
2910 C8	6906 G5
2911 C7	6907 D1
2912 F4	6909 C6
2913 D8	6910 C9
2914 A7	6914 E6
2916 C9	6915 D4
2916 B7	6916 E6
2917 F11	6917 E5
2918 D3	6918 F4
2919 H10	6919 H8
2920 E3	6905 F2
2922 D5	6951 F1
2923 G9	7801 H2
2924 D9	7802 J3
2925 H6	7803 J2
2926 B7	7804 B3
2927 G5	7801 G9
2928 H1	7803 G7
2929 D9	7904 F7
2930 C6	7905 A5
2931 H10	7906 D9
2932 D4	7907 F3
2933 B8	7908 G3
3500 H1	7909 C5
3501 I1	7952 B5
3503 H2	7953 H2
3504 H3	7900 B2
3506 H5	F201 B2
3508 H3	F202 B3
3509 H4	7900 B3
3510 H2	F204 A4
3511 I2	F205 E2
3512 I2	F206 E2
3513 J3	F207 E4
3514 I3	F208 E4
3900 B2	F210 H3
3901 B1	F211 H5
3902 B2	F212 I3
3903 H6	F213 I6
3904 G1	F214 I2
3905 B2	F215 J1
3907 A4	F216 H4
3908 A4	F203 B4
3909 G8	F217 G12
3910 A5	I201 D3
3911 C4	I203 D7
3912 C4	I204 B5
3913 A5	I205 D8
3915 B4	I206 B11
3916 C4	I207 C11
3917 C4	I208 E3
3918 G8	I210 D4
3919 F6	I211 G7
3920 G7	I212 F8
3921 B5	I213 H9
3922 B5	
3923 B6	
3924 G8	
3926 F8	
3927 F8	
3928 A2	
3930 A8	
3931 G8	
3932 H9	
3933 G9	
3934 E9	
3935 H7	
3937 A5	
3938 H5	
3939 H6	
3940 G4	
3941 D3	
3942 H9	
3943 H9	
3944 E3	
3945 D3	
3946 F3	
3947 H10	
3948 D3	
3949 D4	
3950 A7	
3951 G5	
3952 D8	
3954 G7	
3955 E1	
3956 B5	
3959 G4	
3960 F3	
3961 D8	
3962 B4	
3963 H8	
3964 H11	
3965 H11	
3967 F2	
3968 G2	
3969 F3	
3971 G4	
3973 H6	
3975 G3	
3981 F4	
3982 G4	
3983 F4	
3989 H9	
3990 B2	
3993 E3	
3994 D2	
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3996 G6	
3997 H1	
3998 C4	
3999 D3	
5900 C11	

Mains switch panel

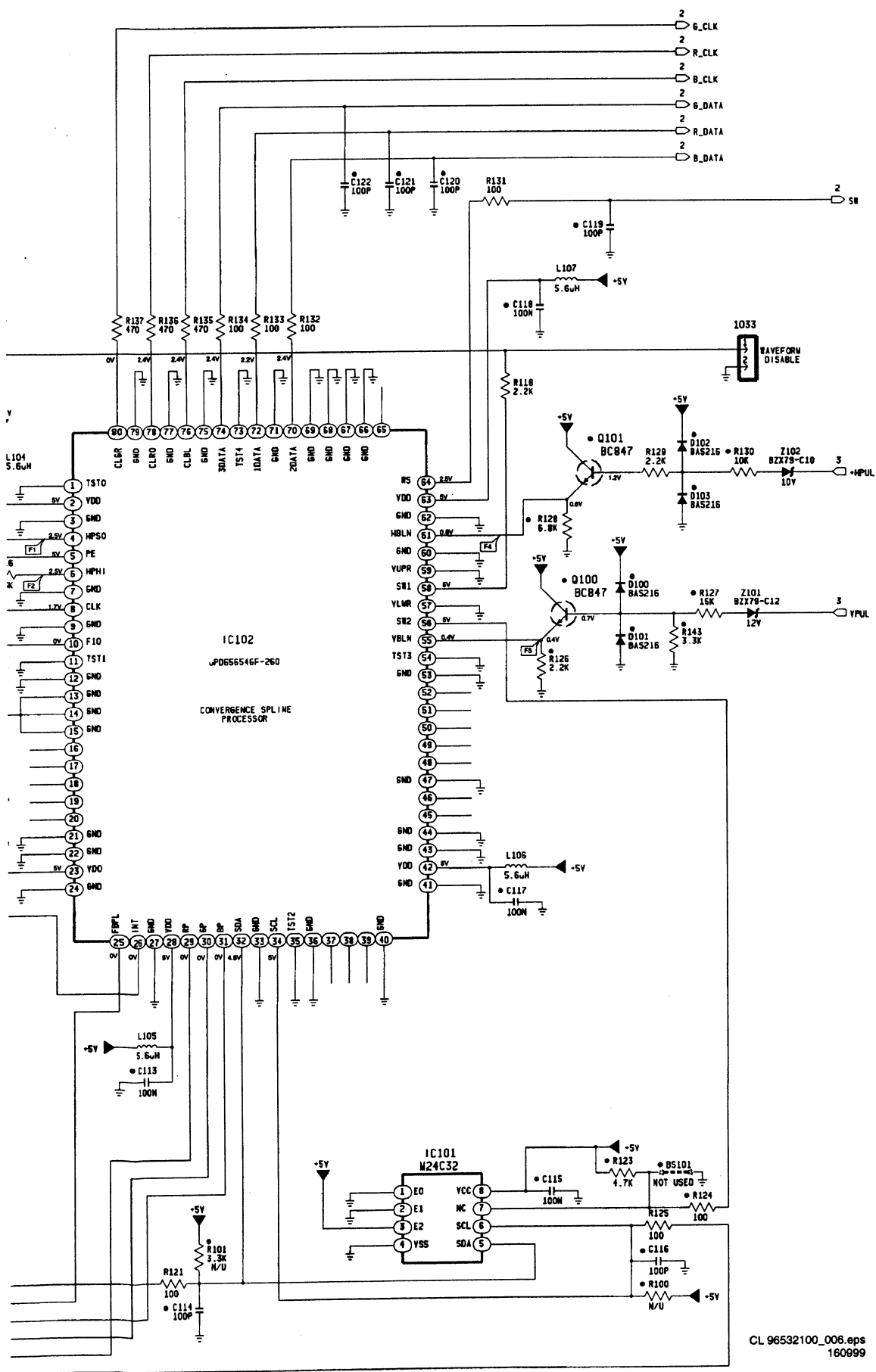


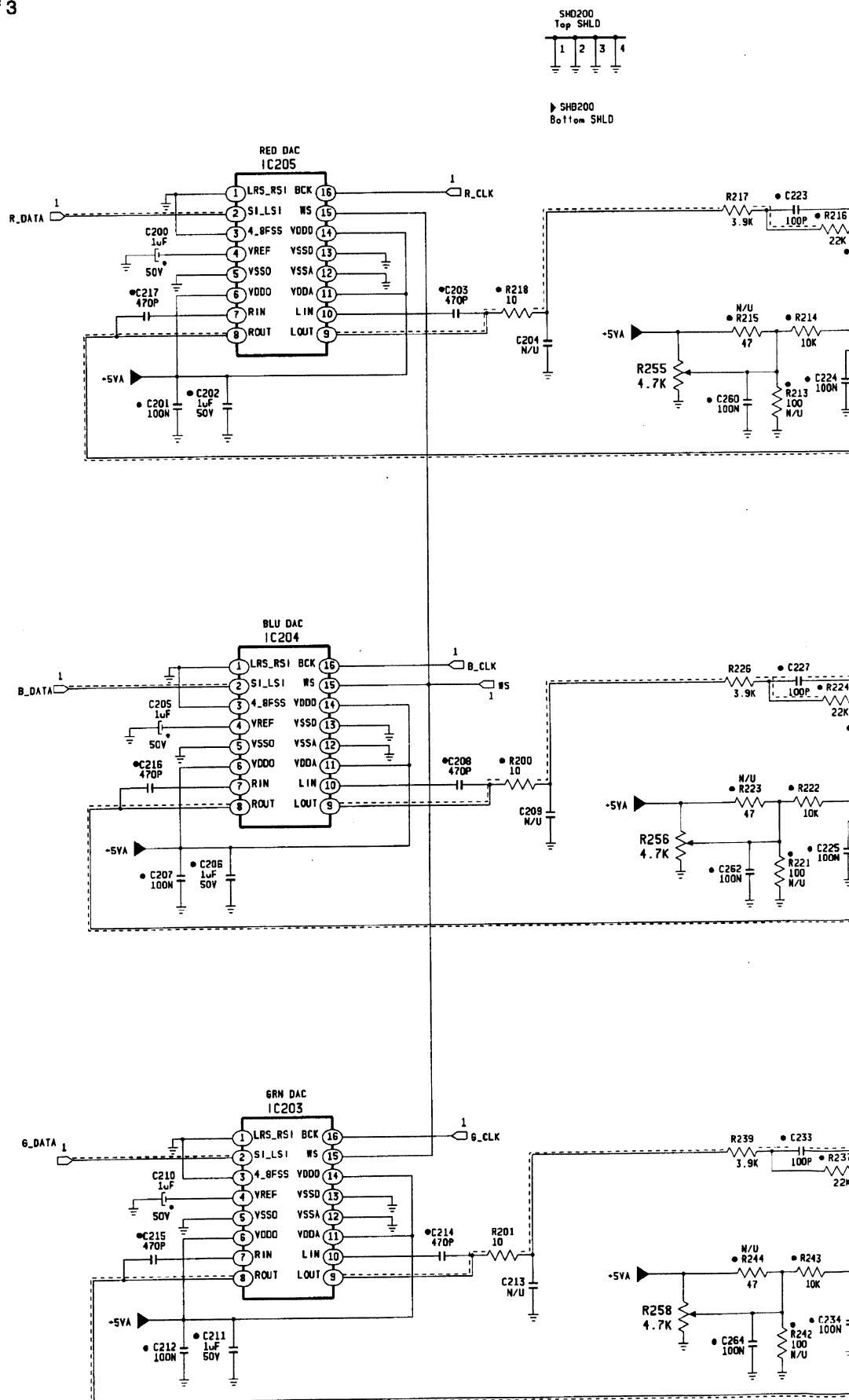
0001 A2
1000 B1
1001 A2
1002 A3

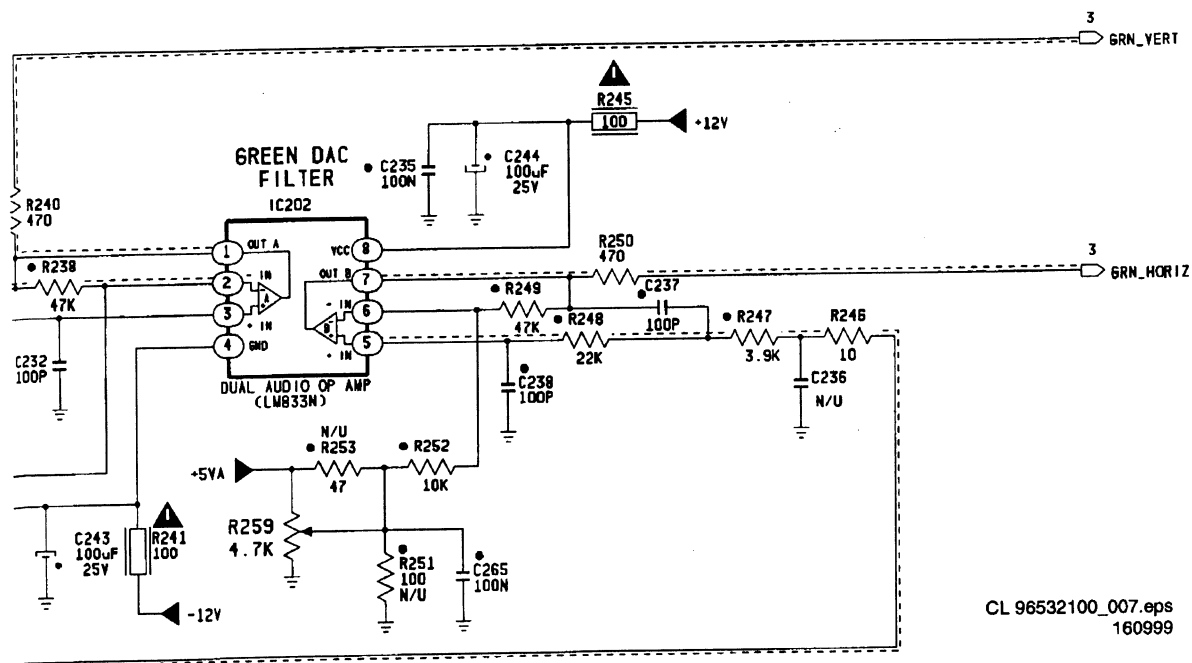
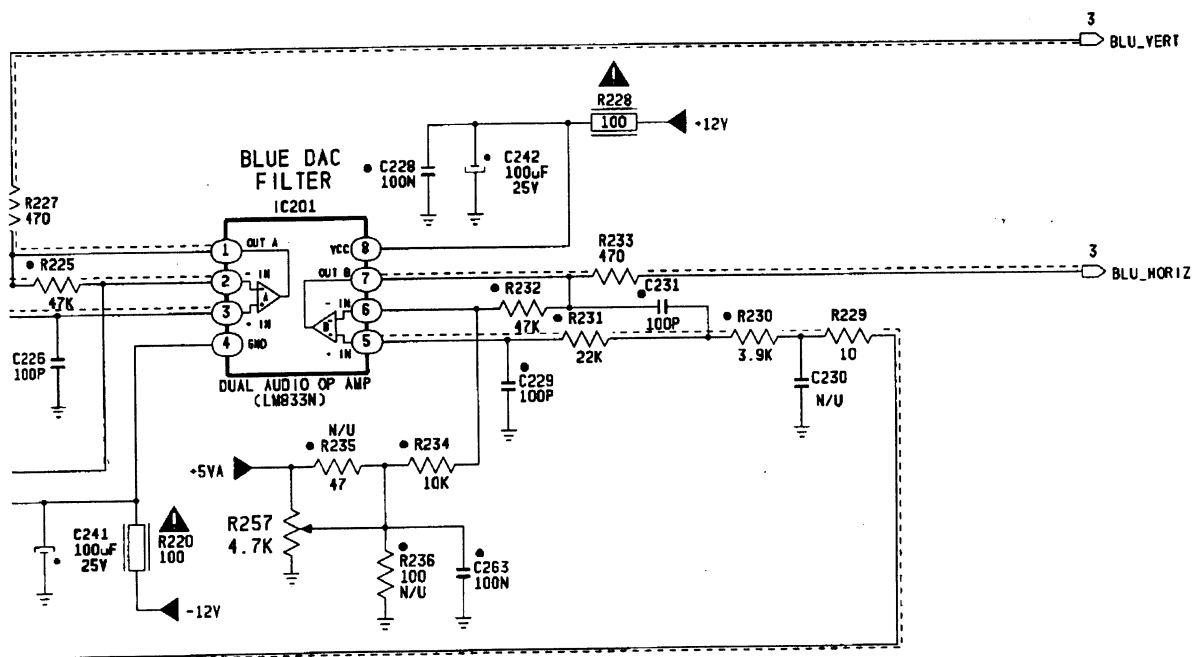
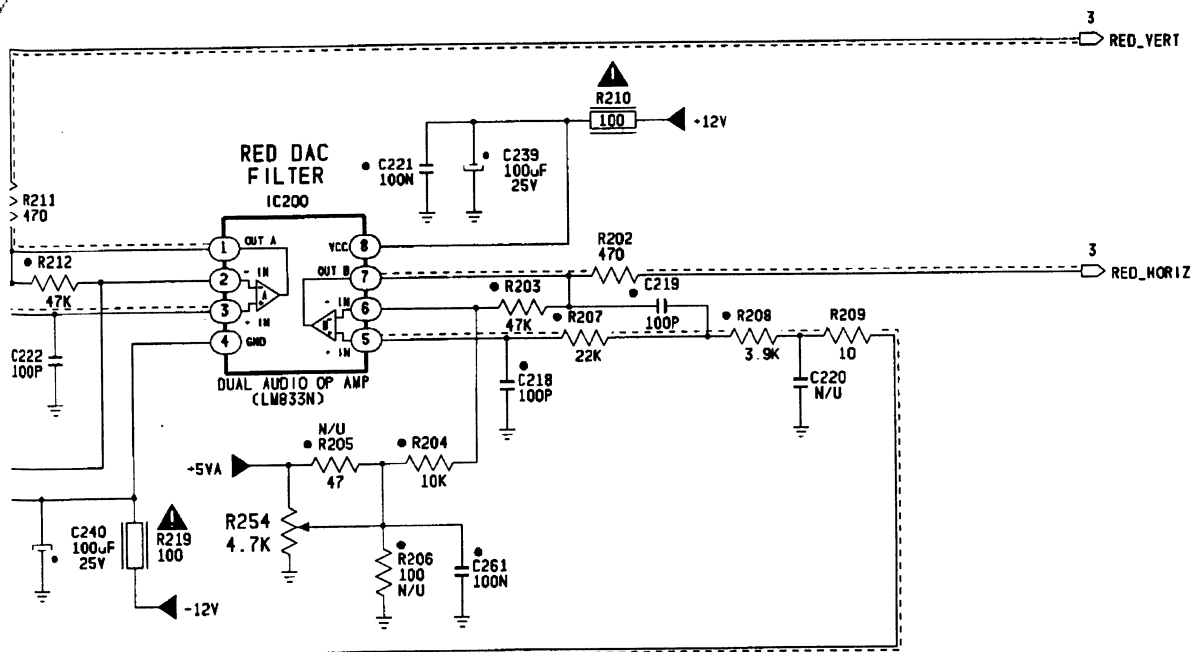
CONVERGENCE 1 of 3



49

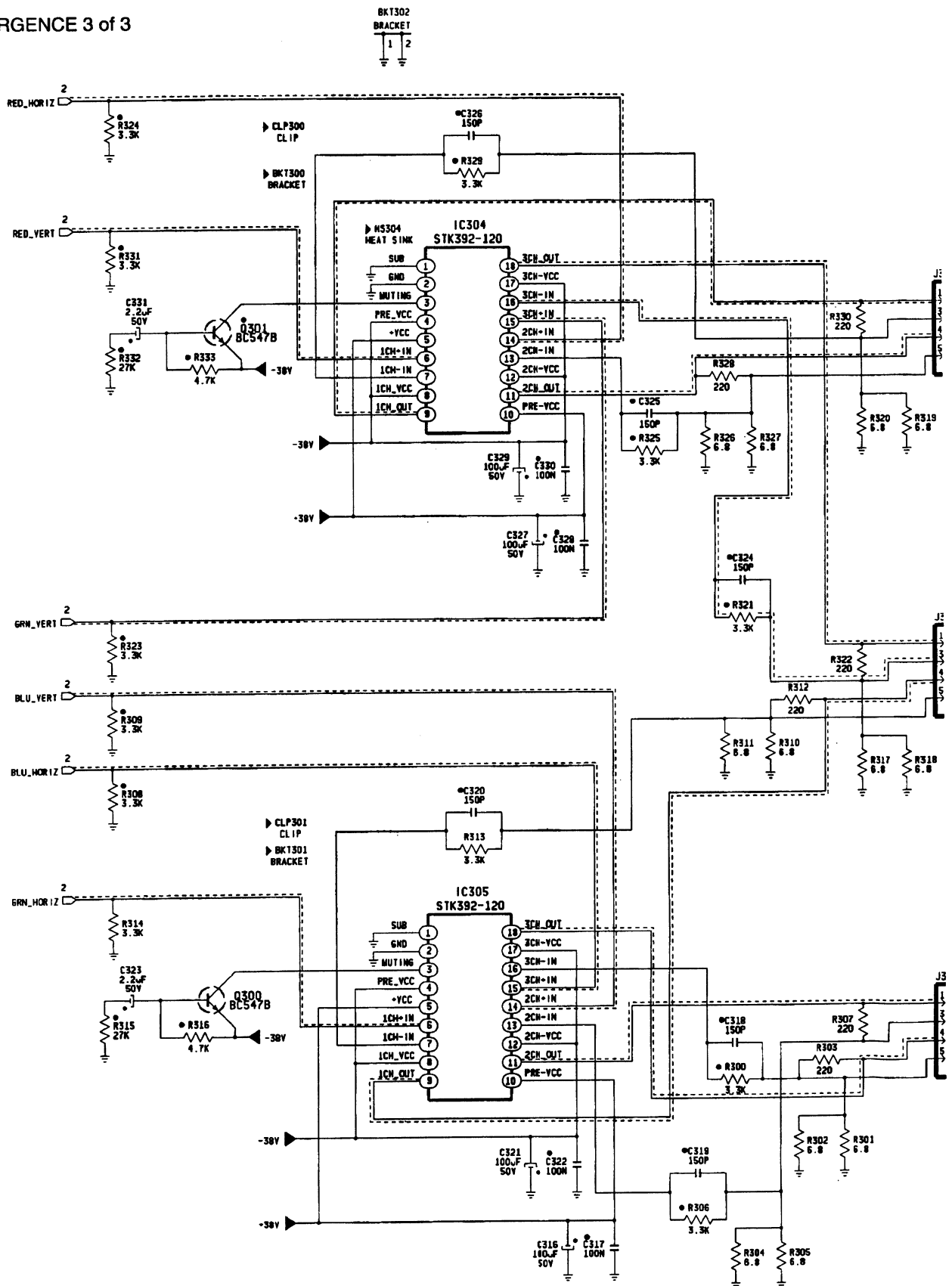






Convergence panel

CONVERGENCE 3 of 3



51

104

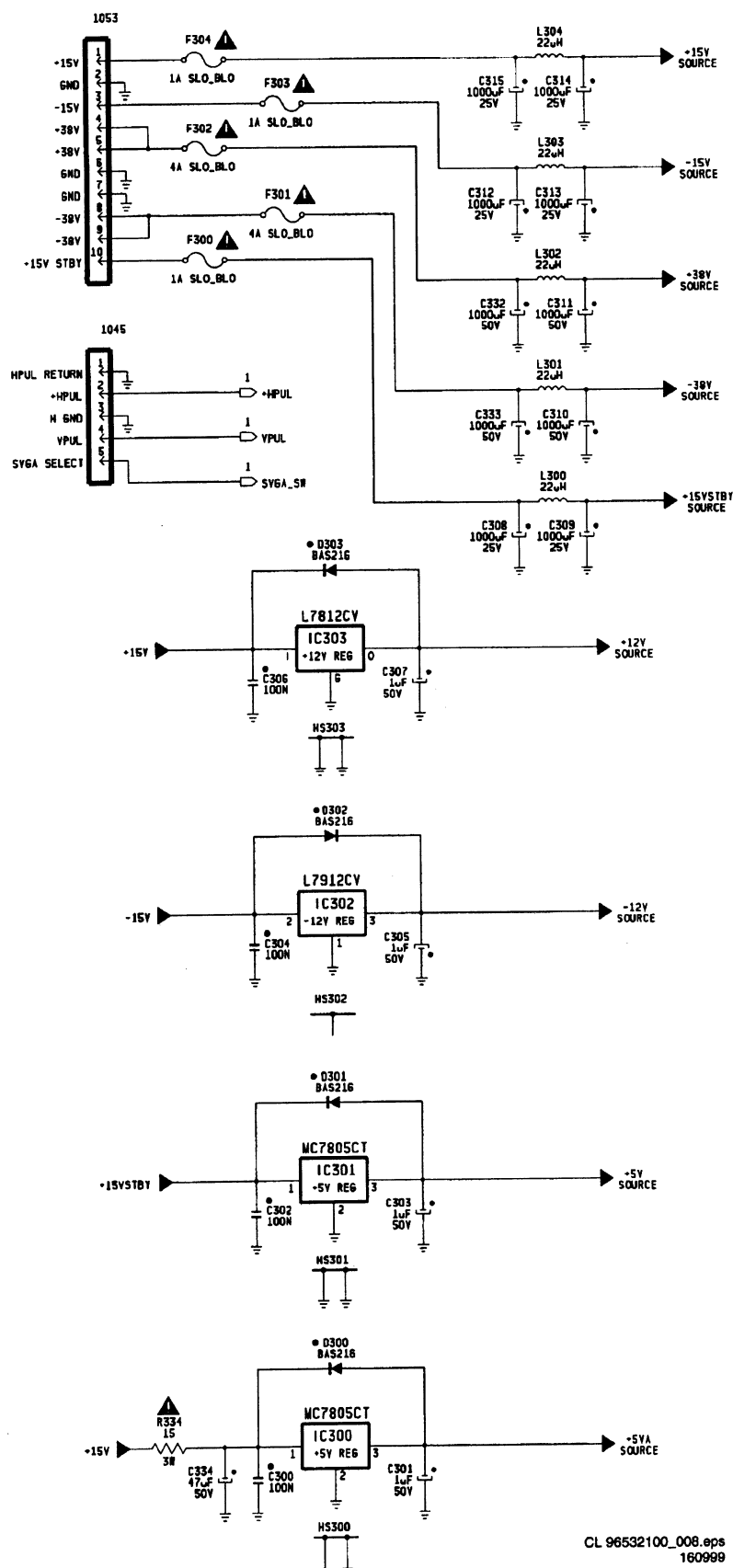
RED OUTPUT

103

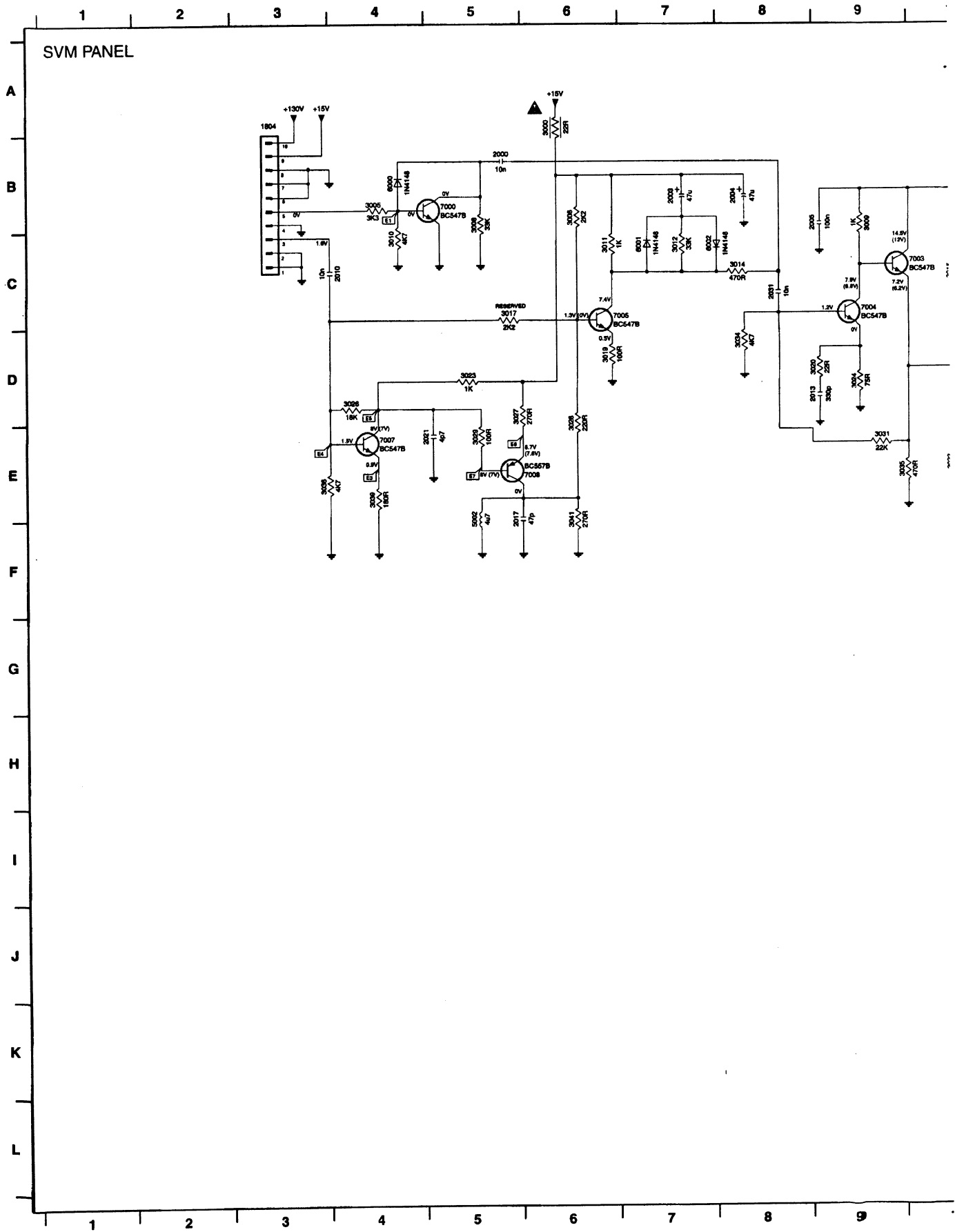
GREEN OUTPUT

102

BLUE OUTPUT

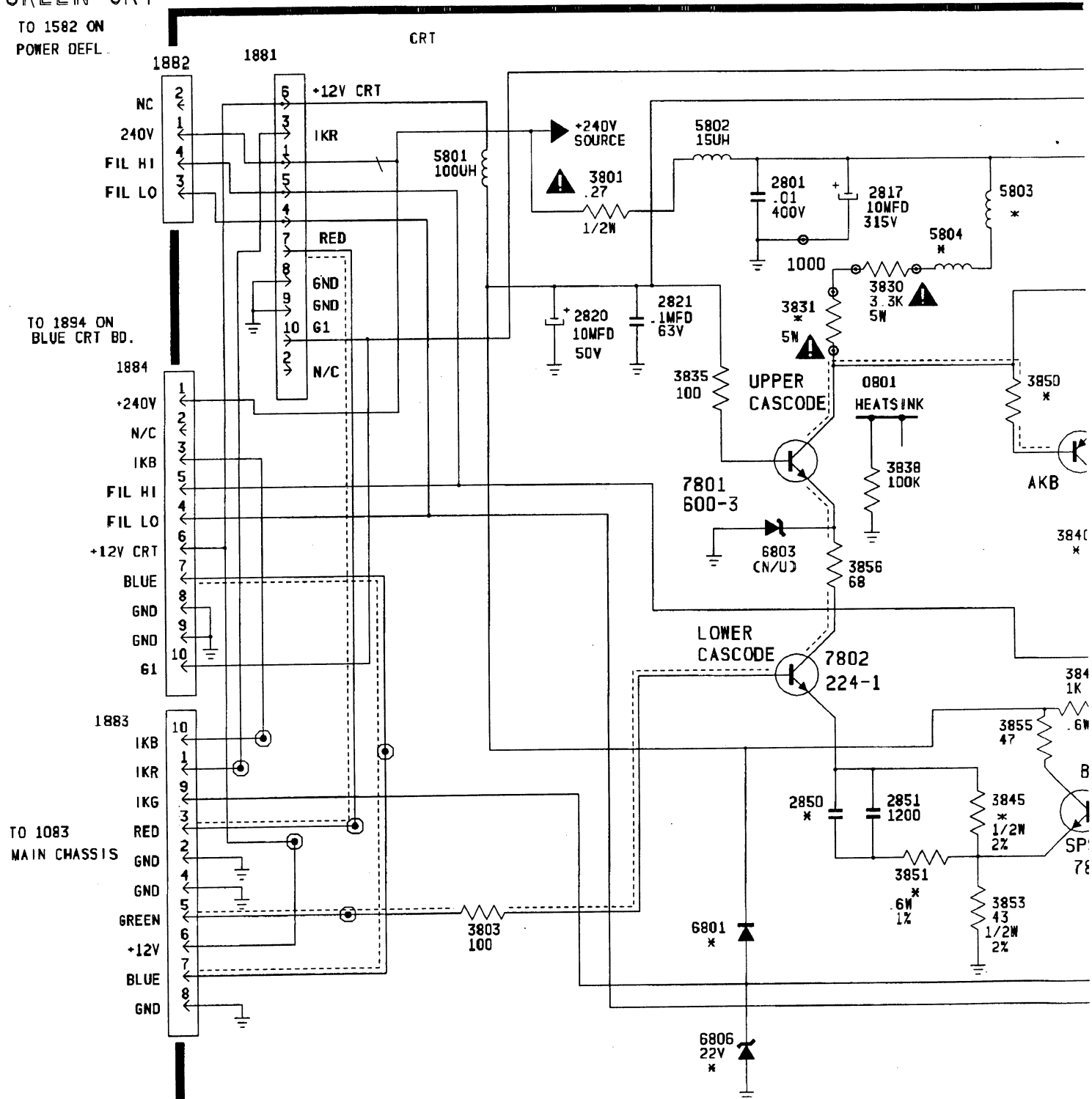


SVM PANEL



CRT GREEN panel

GREEN CRT

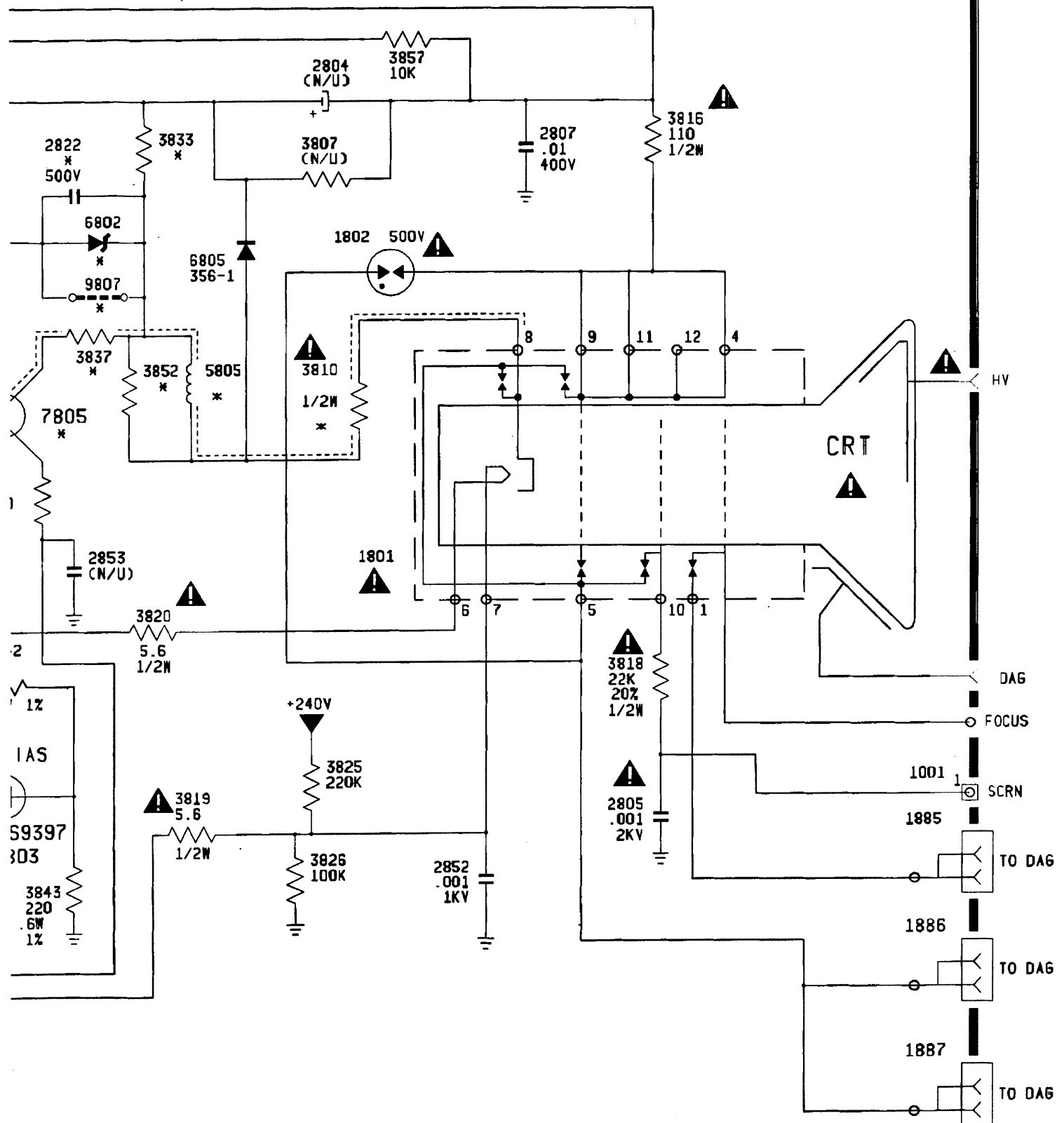
TO 1582 ON
POWER DEFL.

NOTES:

UNLESS OTHERWISE SPECIFIED

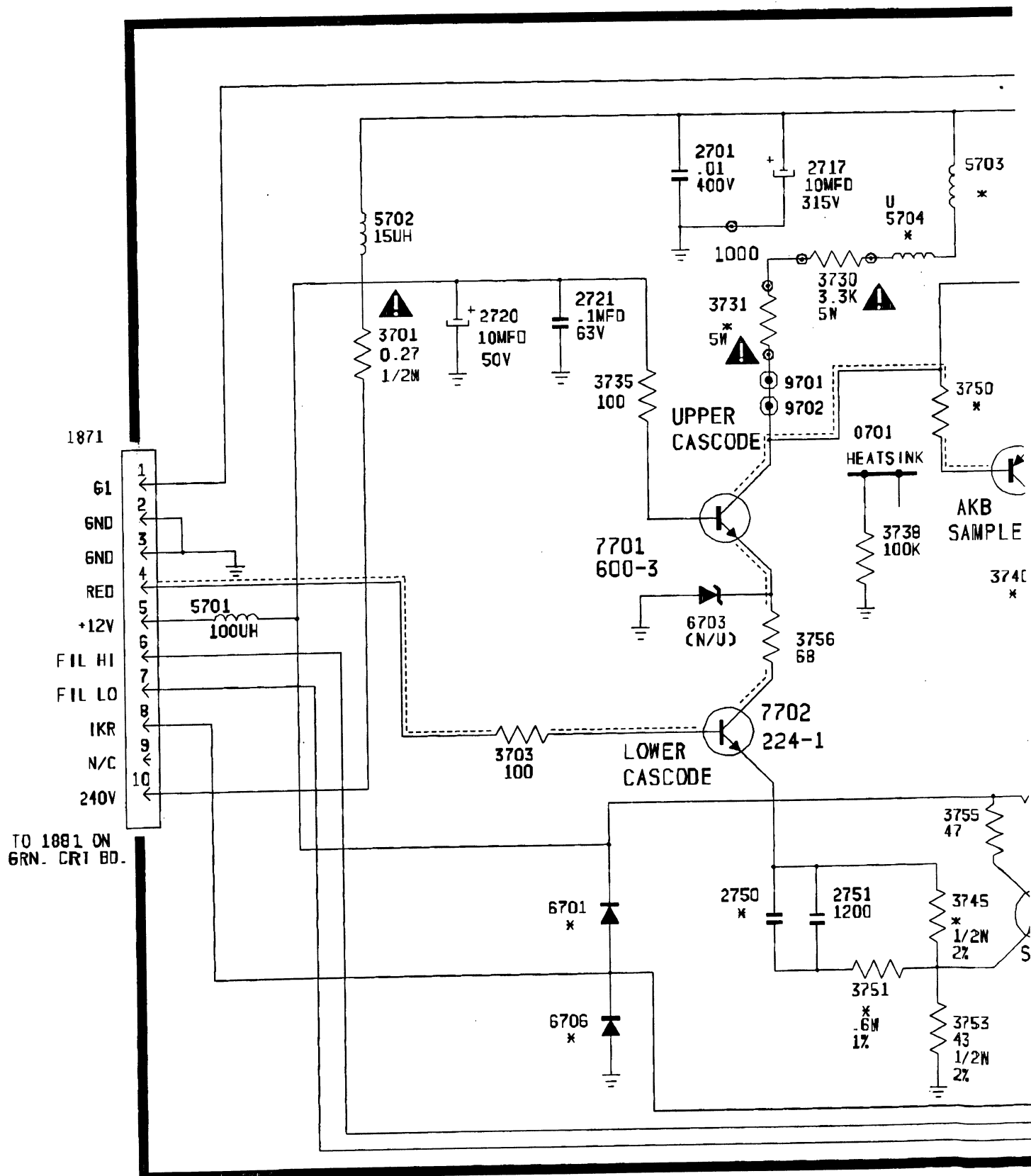
1. CAPACITANCE VALUES OF ONE OR MORE ARE PICOFARADS.
2. CAPACITANCE VALUES LESS THAN ONE ARE MICROFARADS.
3. RESISTORS ARE IN OHMS, 1/4W, 5%.
4. • = SURFACE MOUNTED DEVICE (SMD).
5. ⚠ = PCEC REPLACEMENT PART NUMBERS ONLY.
6. ⊙ = LAYOUT INDUCED JUMPER.
7. * = SEE PARTS LIST.

E BOARD

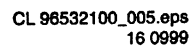


CRT RED panel

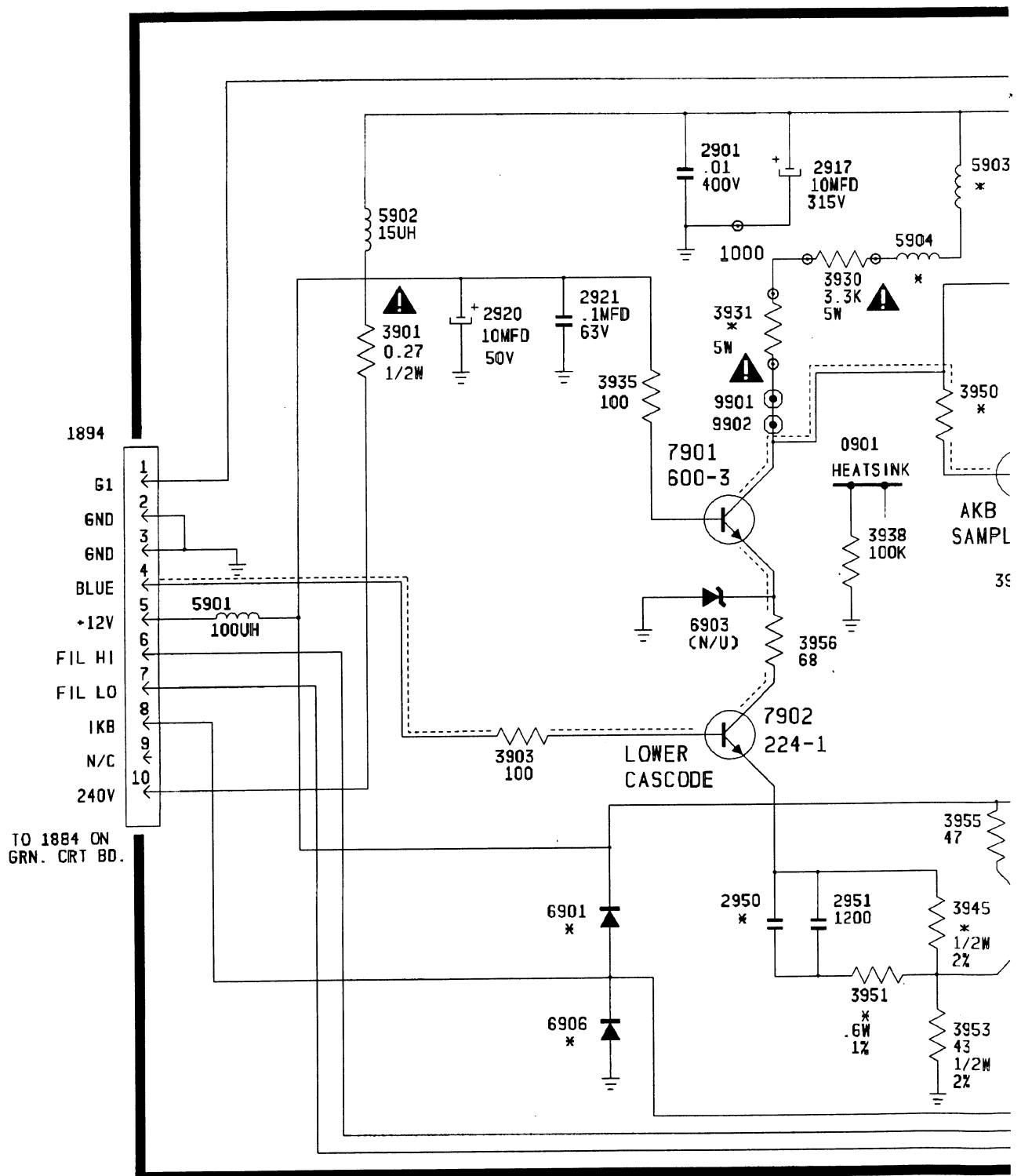
RED CRT



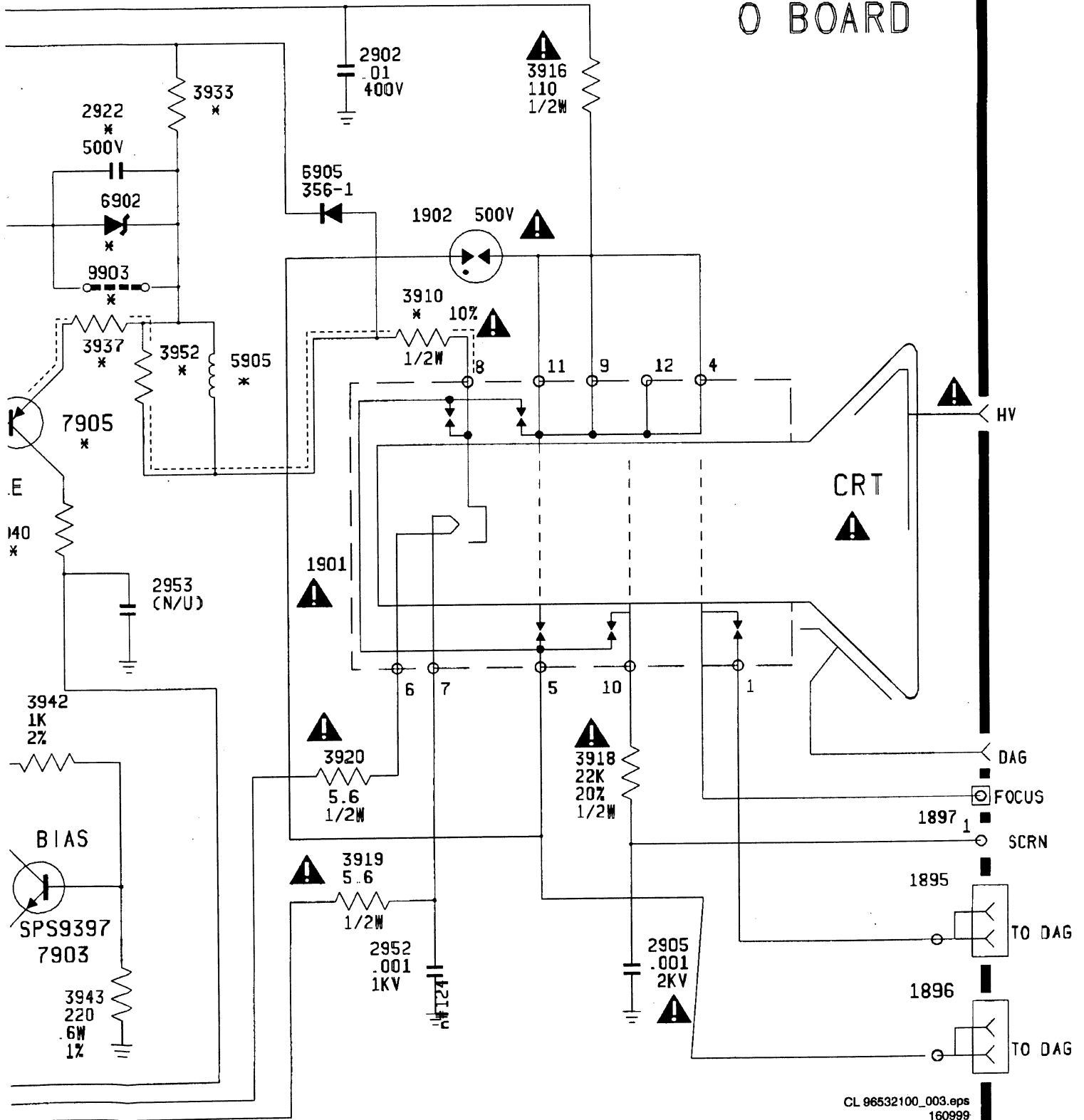
N BOARD



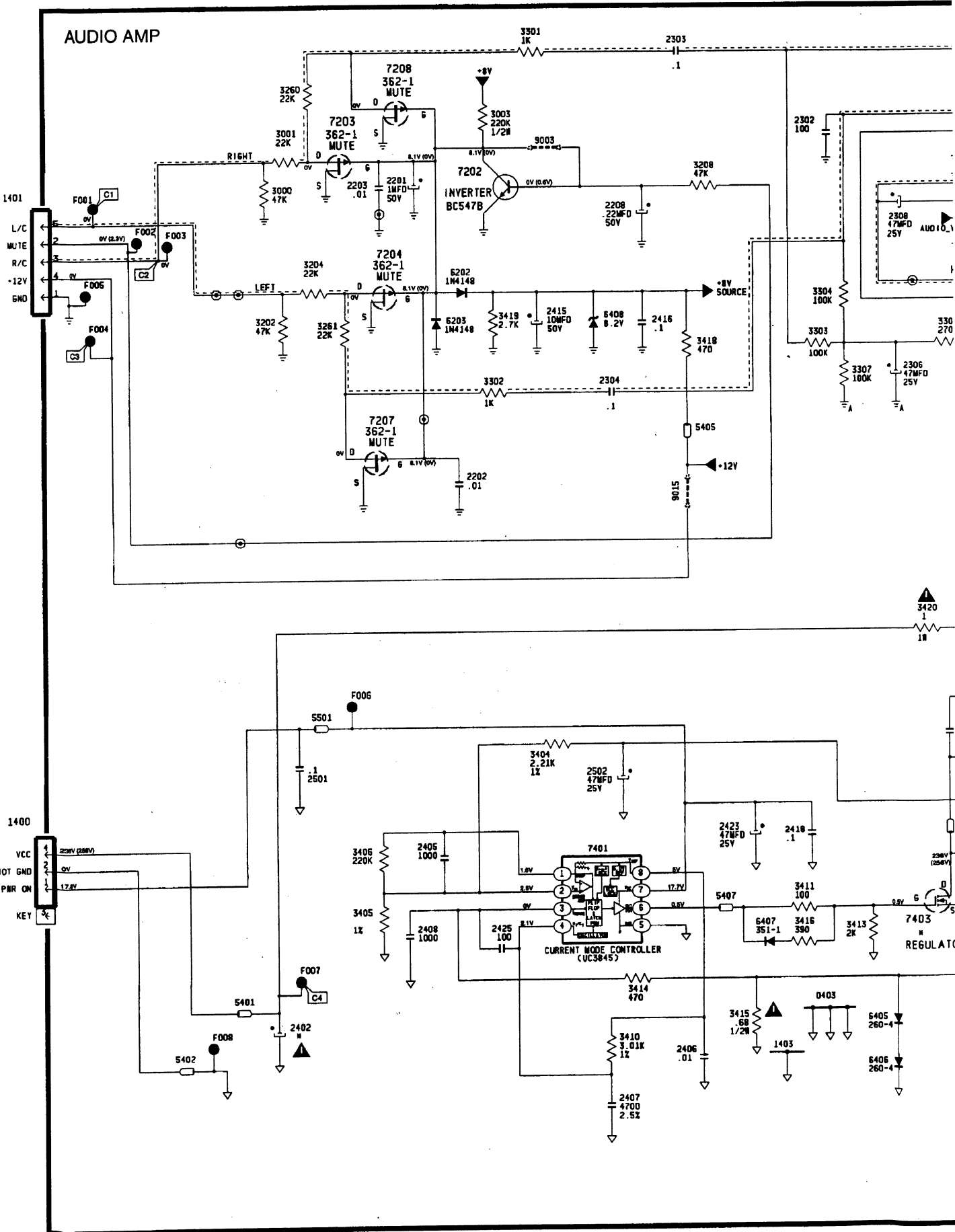
BLUE CRT



O BOARD



Audio amplifier

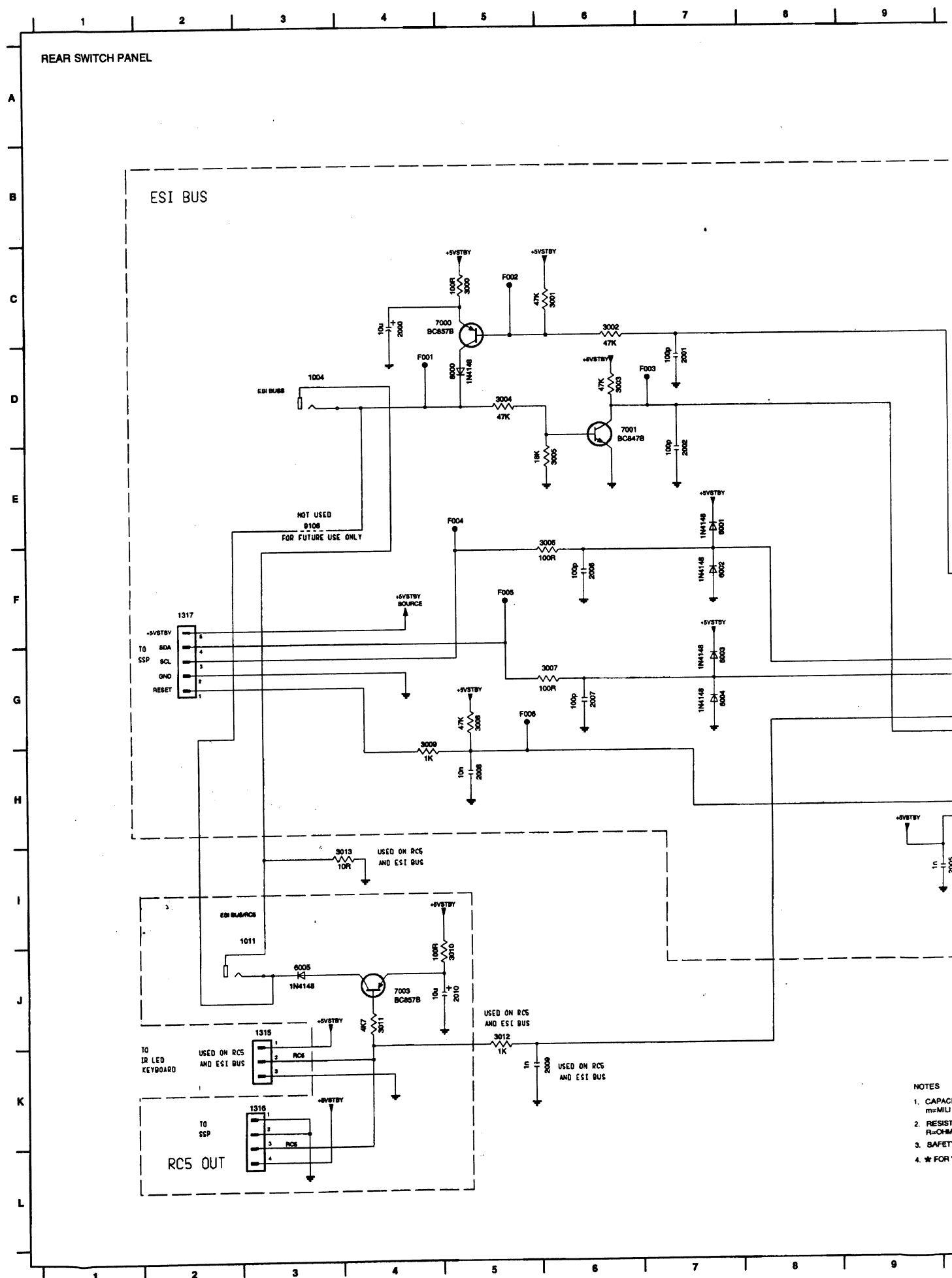


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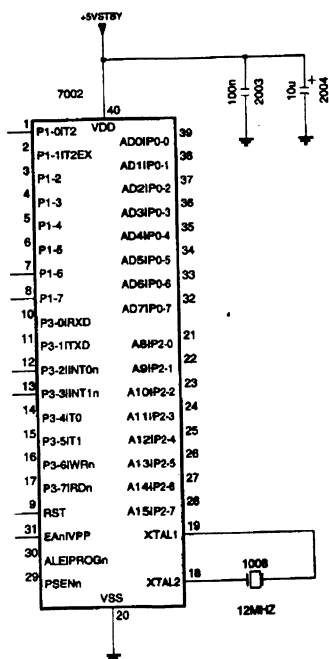
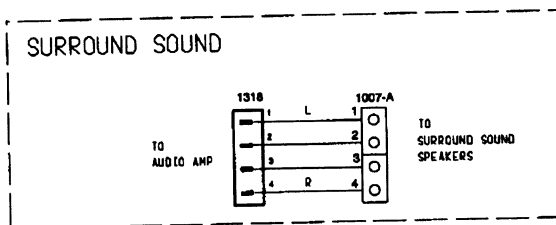
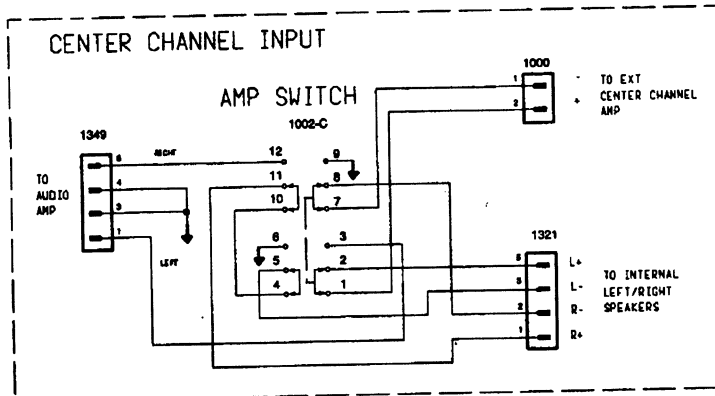
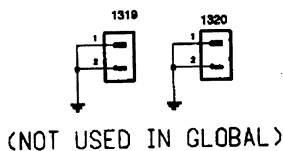
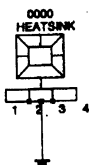
- NOTES:**

UNLESS OTHERWISE SPECIFIED

- UNLESS OTHERWISE SPECIFIED
1. CAPACITANCE VALUES OF ONE OR MORE ARE PICOFARADS.
 2. CAPACITANCE VALUES LESS THAN ONE ARE MICROFARADS.
 3. RESISTORS ARE IN OHMS, 1/4W, 5%.
 4. $\bullet$ = SURFACE MOUNTED DEVICE (SMD).
 5. $\blacktriangle$ = PCEC REPLACEMENT PART NUMBERS ONLY.
 6. $\odot$ = LAYOUT INDUCED JUMPER.
 7. ■ = SEE PARTS LIST.



10 11 12 13 14 15 16 17



ANCE VALUES ARE IN FARADS:
u=MICRO n=NANO p=PICO f=FEMTO
NCE VALUES ARE IN OHMS:
K=KILO M=MEGA G=GIGA T=TERA
TRIANGLE REPRESENTS PCEC REPLACEMENT PART ONLY.
UUE SEE PARTS LIST.

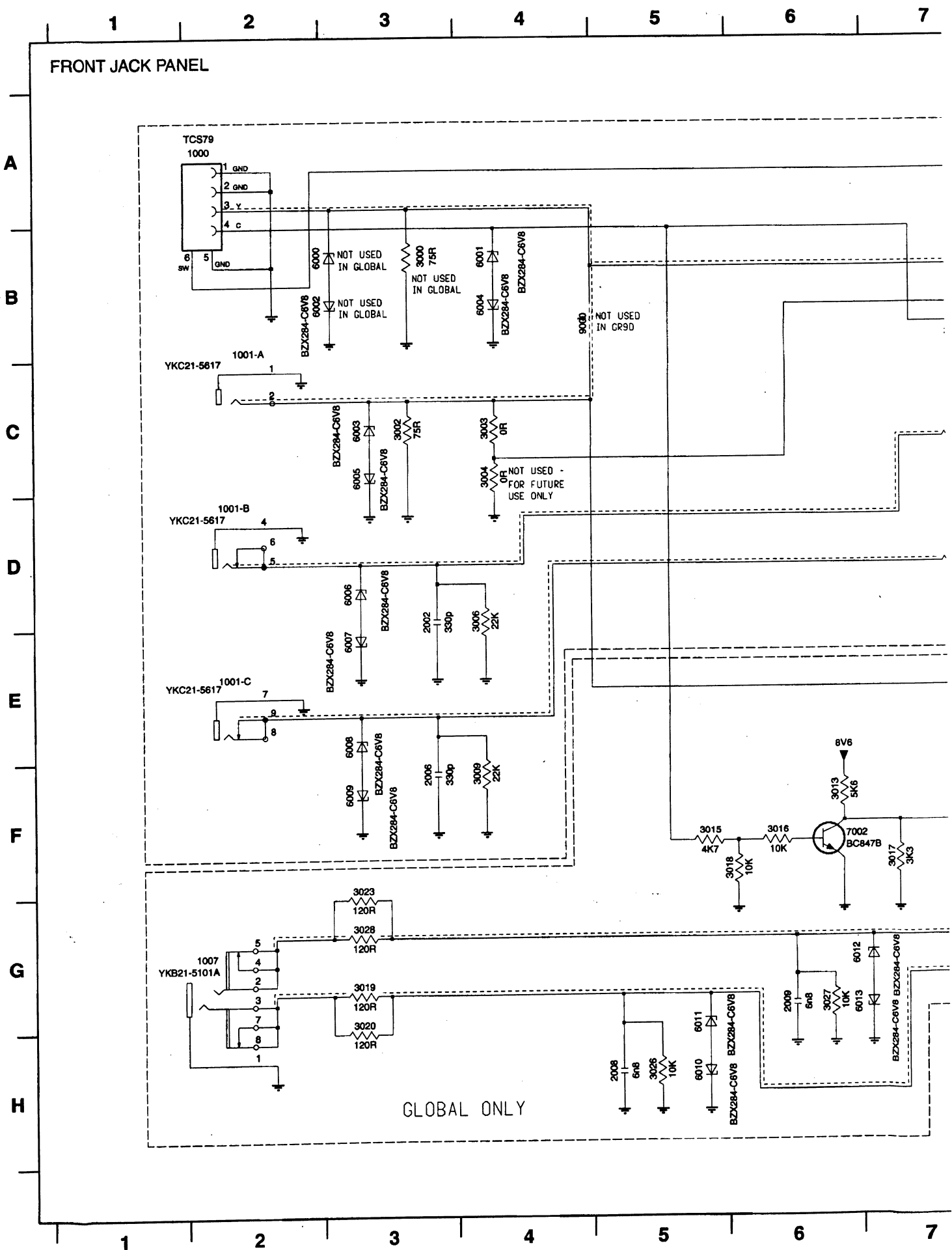
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150999

0000 C11
1000 C18
1002-C D15
1004 D3
1007-A F16
1008 H11
1011 B3
1015 J3
1316 K3
1317 F2
1318 F14
1319 A15
1320 A16
1321 D16
1349 D13
2000 C4
2001 D7
2002 E7
2003 F11
2004 F12
2005 F10
2006 F8
2007 G6
2008 H5
2009 K6
2010 J5
3000 C5
3001 C6
3002 C6
3003 D6
3004 D5
3005 E6
3006 F6
3007 G6
3008 H4
3010 J5
3011 J4
3012 J5
3013 I4
6000 D5
6001 E7
6002 F7
6003 G7
6004 G7
6005 J3
7000 C5
7001 D6
7002 F10
7003 J4
9106 E3
F001 D4
F002 C5
F003 D7
F004 E5
F005 F5
F006 G5

10 11 12 13 14 15 16 17

Front jack panel



8

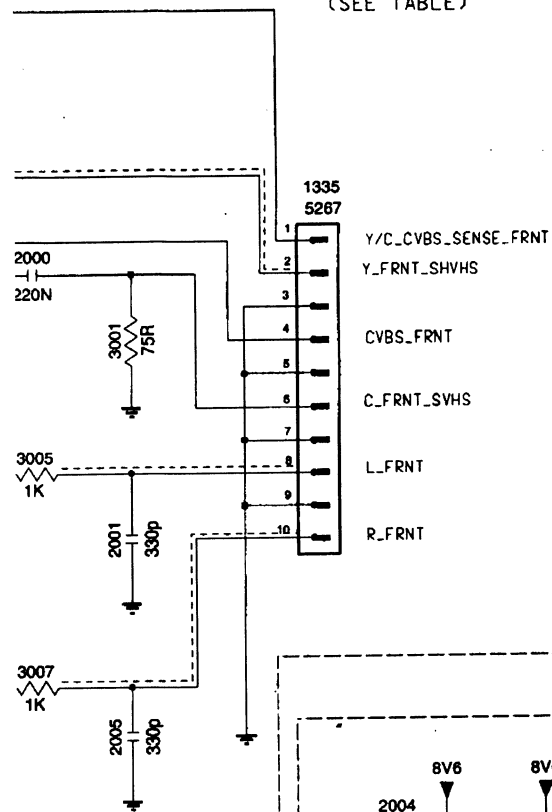
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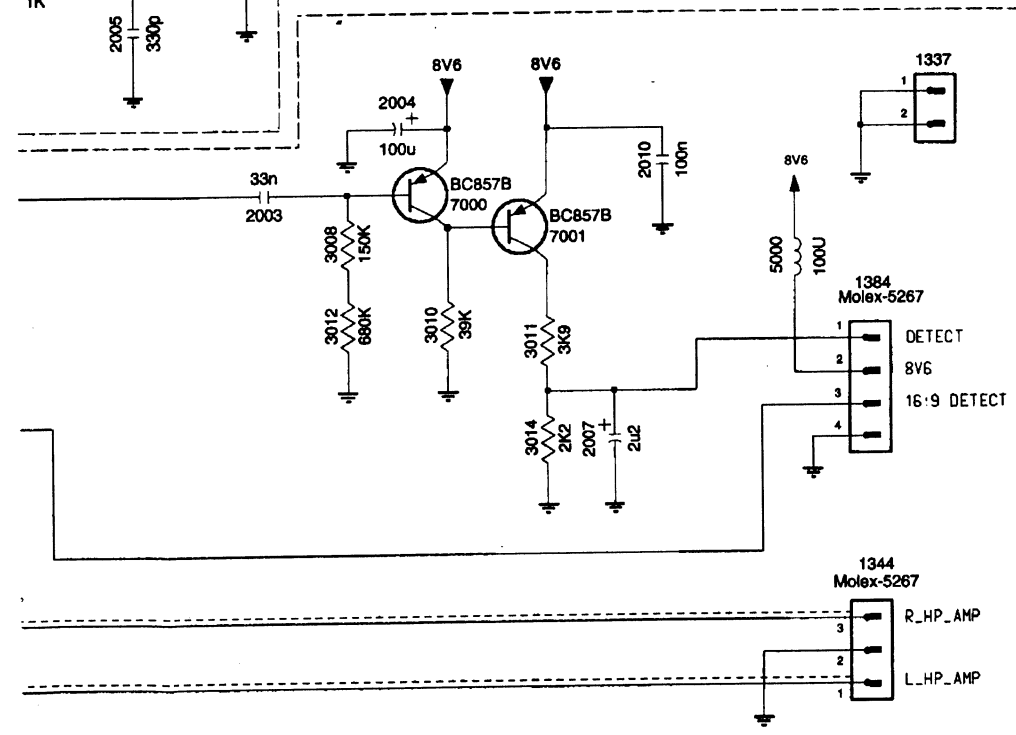
12

GR9D AND GLOBAL (SEE TABLE)



NOTES

1. CAPACITANCE VALUES ARE IN FARADS:
m=MILI u=MICRO n=NANO p=PICO f=FEMTO
2. RESISTANCE VALUES ARE IN OHMS:
R=OHM K=KILO M=MEGA G=GIGA T=TERA
3. SAFETY TRIANGLE REPRESENTS PCEC REPLACEMENT PART ONLY.
4. ★ FOR VALUE SEE PARTS LIST.



1000 A2
1001-A B2
1001-B C2
1001-C D2
1002 C11
1005 E7
1006 F7
1007 F2
2000 B9
2001 C10
2002 D2
2003 D5
2004 D5
2005 D10
2006 E2
2007 E6
2008 G5
2009 G6
3000 B7
3001 C10
3002 C2
3003 C3
3004 C3
3005 C10
3006 D3
3007 D10
3008 D5
3009 E3
3010 E5
3011 E6
3012 E5
3013 E3
3014 E6
3015 E2
3016 E3
3017 F4
3018 F3
3019 F5
3020 F5
3023 G5
3026 G5
3027 G6
3028 G5
5000 F6
6000 B7
6001 B9
6002 B7
6003 C3
6004 C9
6005 C3
6006 C9
6007 D9
6008 D9
6009 E9
6010 G4
6011 G5
6012 G7
6013 G7
7000 D6
7001 D6
7002 F3
9000 B3

A

B

C

D

E

F

G

H

8

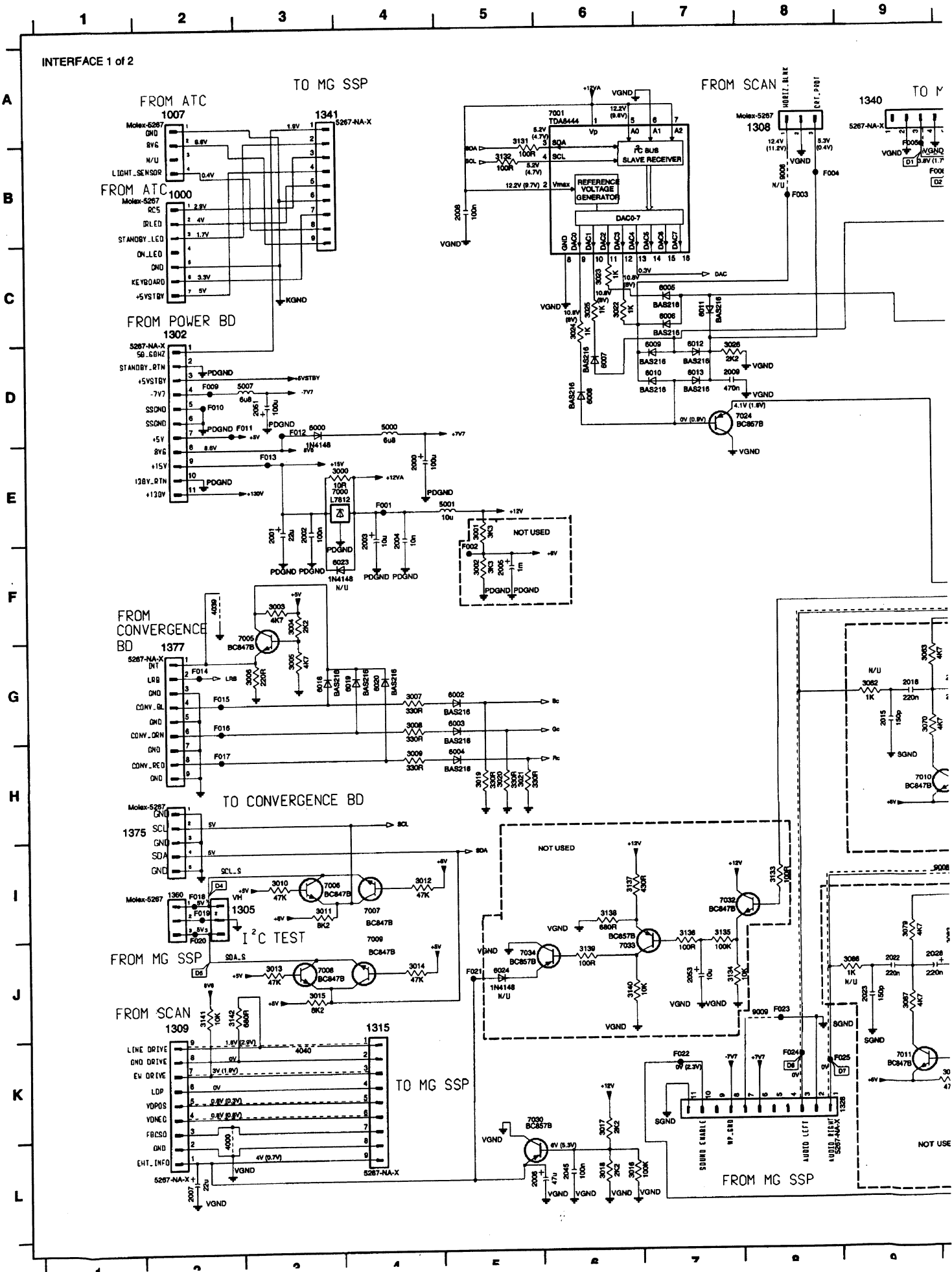
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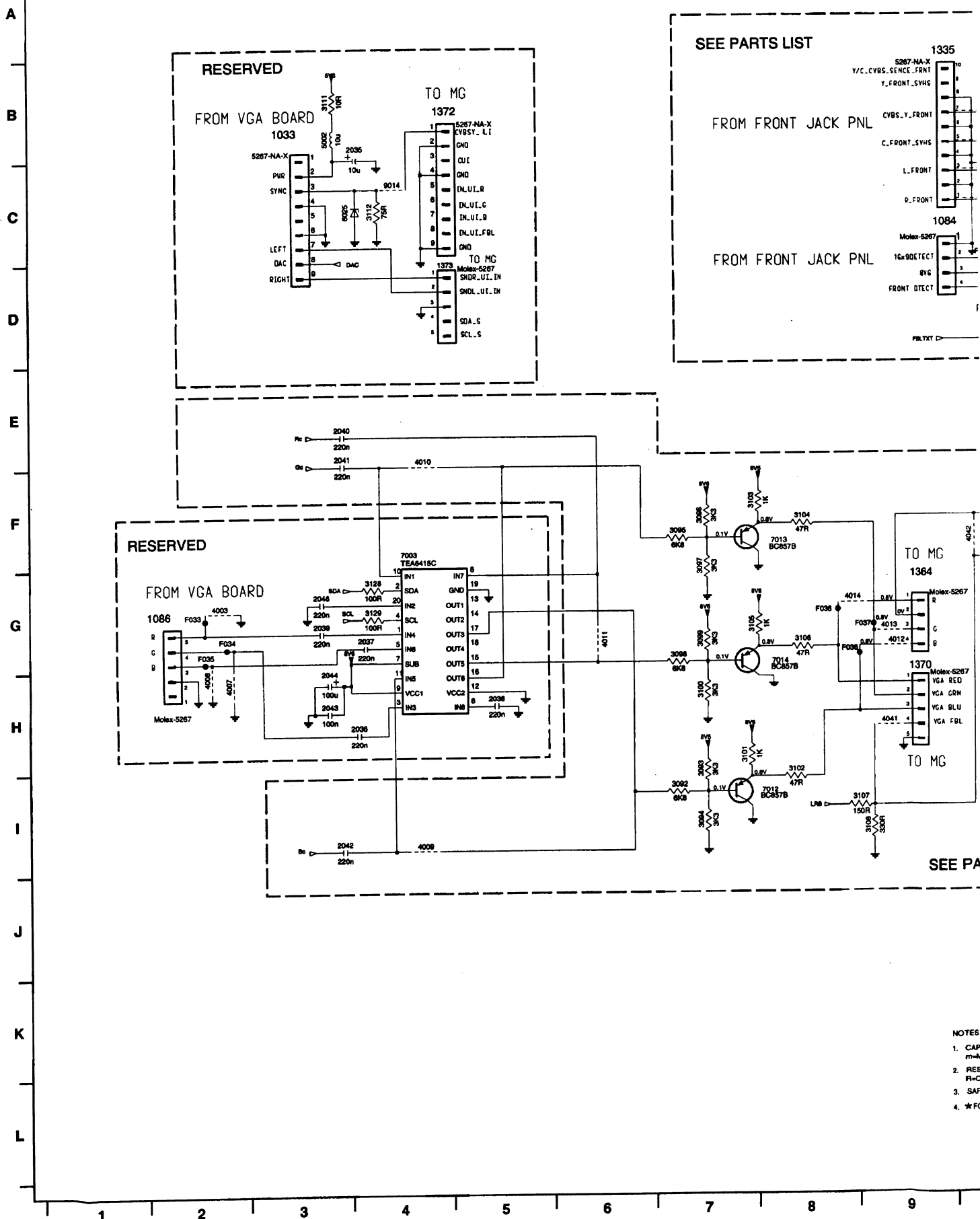
Interface panel

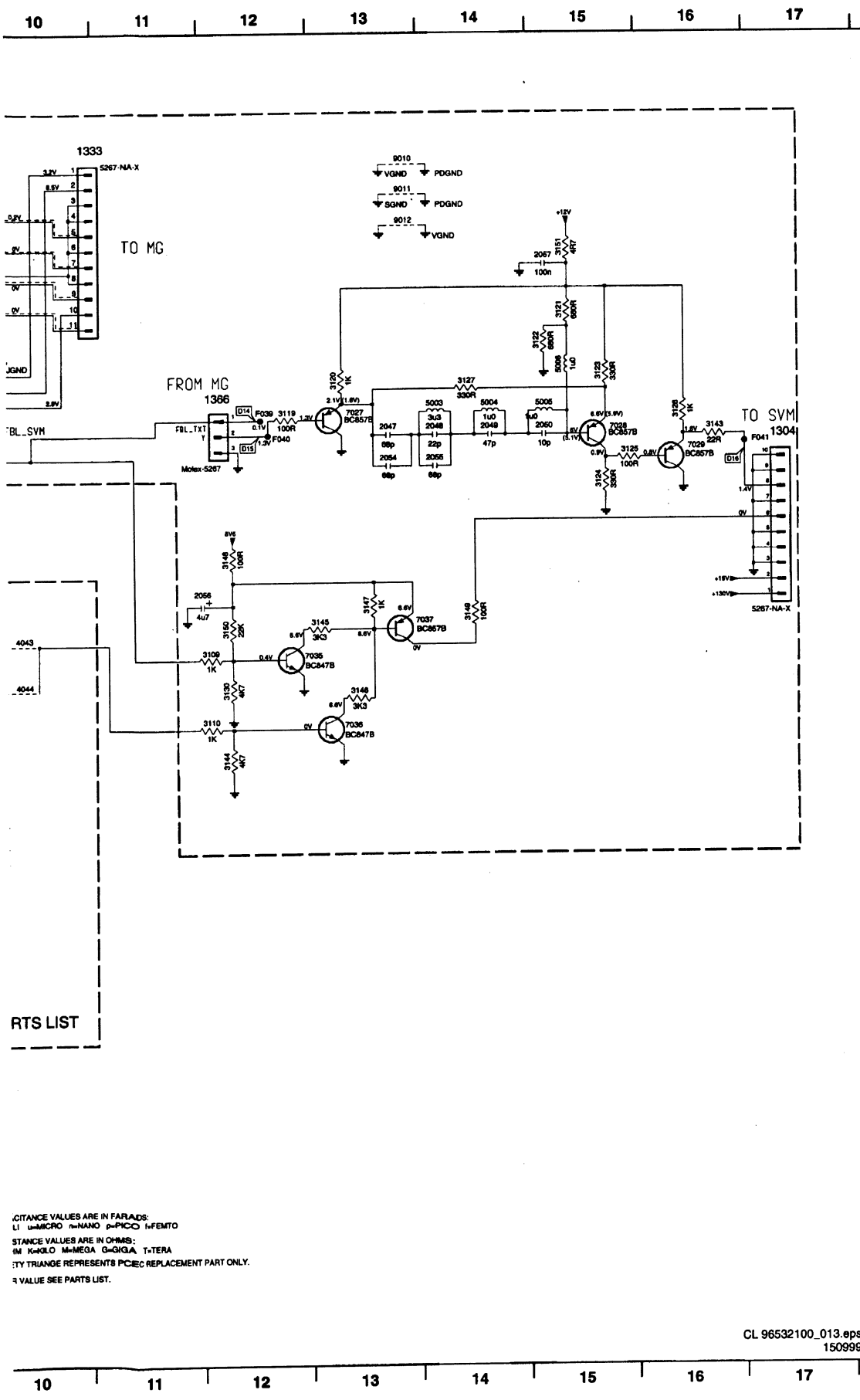


1006 A2	3091 K18
1007 B2	3113 B18
1008 B7	3114 B18
1301 H14	3118 J13
1302 H2	3119 J13
1305 L2	3117 E13
1306 A8	3118 F13
1306 J2	3117 B5
1311 G1	3117 J13
1315 J4	3133 B8
1328 K8	3134 J7
1338 J2	3138 J8
1340 A8	3137 J7
1341 A3	3137 J7
1360 L2	3137 H6
1376 H2	3136 H6
1377 G2	3136 H2
1380 E4	3140 J6
2001 E3	3141 J2
2002 E5	3142 J2
2003 E4	3007 G3
2004 G1	3001 G4
2006 F5	4002 J12
2008 L5	4004 D18
2009 L2	4007 G3
2008 B5	4040 K3
2008 D7	5000 D4
2019 A15	5001 E5
2019 B1	5001 L2
2012 D14	6006 D3
2613 D14	6002 D5
2614 G11	6003 D5
2615 L2	6001 G5
2618 B8	6006 C7
2617 G10	6006 C7
2618 G11	6006 D7
2619 E4	6006 D8
2020 H11	6009 D7
2021 I12	6010 C7
2622 J9	6011 D7
2022 J9	6012 D7
2024 G12	6013 D7
2025 G13	6014 E13
2028 J11	6015 E13
2029 J11	6015 H12
2028 J6	6017 K12
2028 K11	6018 D3
2030 I12	6021 G3
2031 J13	6020 B3
2632 L11	6023 F4
2633 C18	6023 F4
2042 D8	7000 E4
2043 D8	7001 A4
2052 F18	7002 A-G10
3003 J7	7002-B H12
3004 J13	7002-C J11
3001 E5	7002-D J10
3002 F5	7006 F3
3003 F3	7007 B9
3004 F3	7007 B9
3005 G3	7009 J3
3006 G3	7008 J4
3007 G4	7018 H9
3008 G4	7011 K8
3009 H4	7015 A14
3010 J3	7016 B15
3011 B3	7017 B14
3012 B3	7017 B14
3013 J3	7018 C15
3014 J4	7020 J14
3015 J3	7021 J13
3016 J3	7022 J13
3017 K8	7023 D13
3018 L8	7024 D7
3019 H5	7025 D18
3020 H5	7025 D18
3021 H5	7030 K5
3022 C6	7031 D14
3023 C6	7032 J7
3025 C6	7033 J6
3026 D7	8001 F13
3028 D7	8005 B9
3029 B13	8006 J11
3029 B13	8008 JH
3030 A14	8011 C8
3032 B15	8017 E4
3033 B18	F002 F5
3034 C16	F003 B9
3035 C16	F003 B9
3037 C18	F006 B10
3038 D17	F007 B10
3040 C13	F008 D12
3041 C14	F010 D2
3042 C18	F011 D3
3043 C18	F012 D3
3044 D12	F013 E3
3046 D12	F014 C2
3047 D12	F015 C2
3048 D12	F017 H2
3049 D13	F018 I2
3050 E12	F019 I2
3052 E13	F020 J2
3063 F13	F021 J5
3064 F13	F022 K7
3065 F13	F023 A8
3065 D13	F024 K8
3066 E14	F026 K8
3067 D14	F030 H3
3068 D14	F031 H3
3069 D15	F032 J13
3080 E16	F030 B16
3081 D18	F030 C16
3082 D18	F032 P17
3084 G11	
3085 G11	
3086 G12	
3087 G12	
3088 G10	
3089 G10	
3071 H10	
3072 H10	
3073 H10	
3074 H10	
3075 H11	
3077 H11	
3078 G13	
3079 H9	
3080 J10	
3081 J10	
3082 J11	
3083 J11	
3084 K11	
3085 K11	
3086 J9	
3087 J9	
3088 K10	
3089 K10	
3090 J12	

Interface panel

INTERFACE 2 of 2

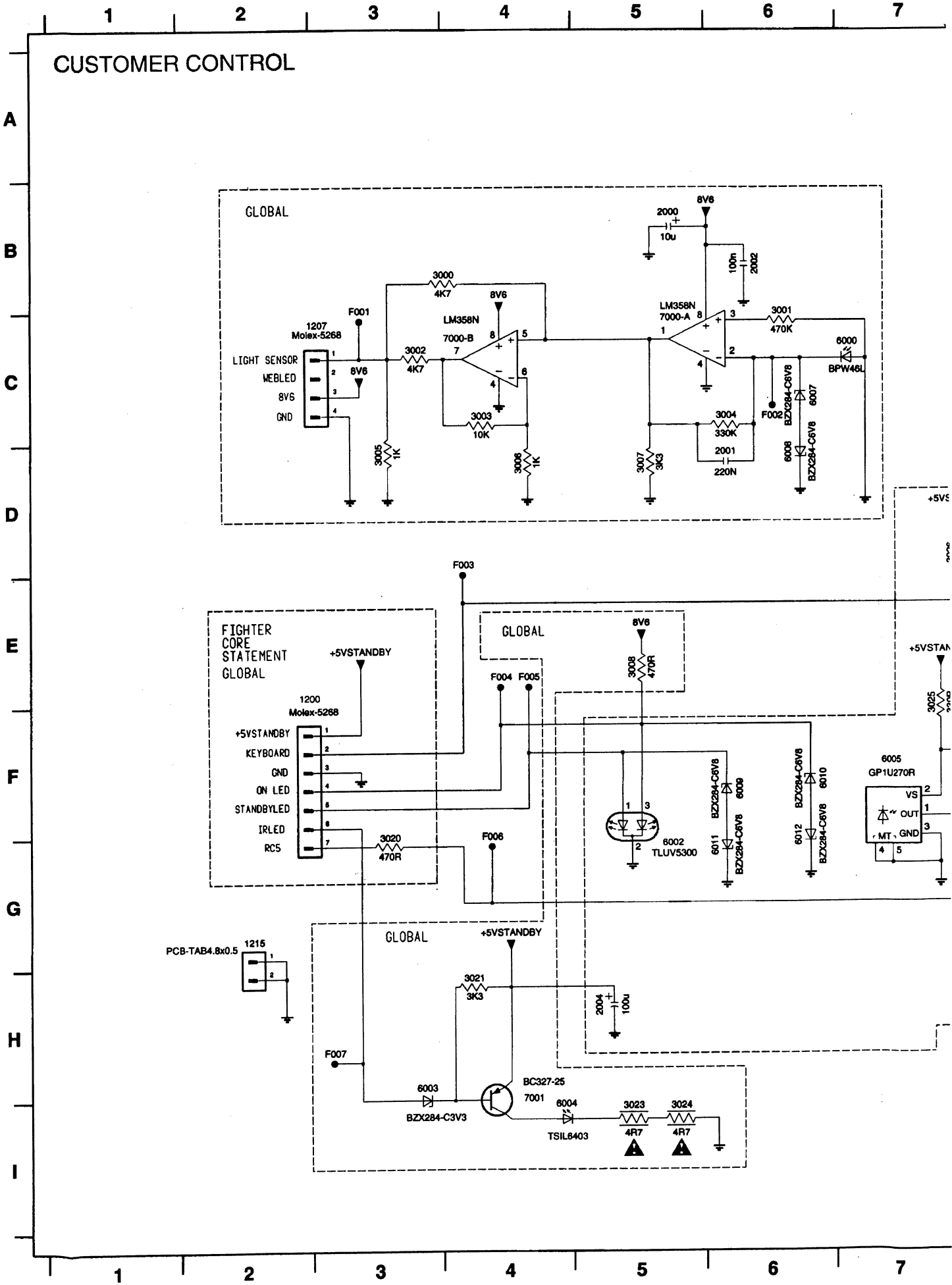


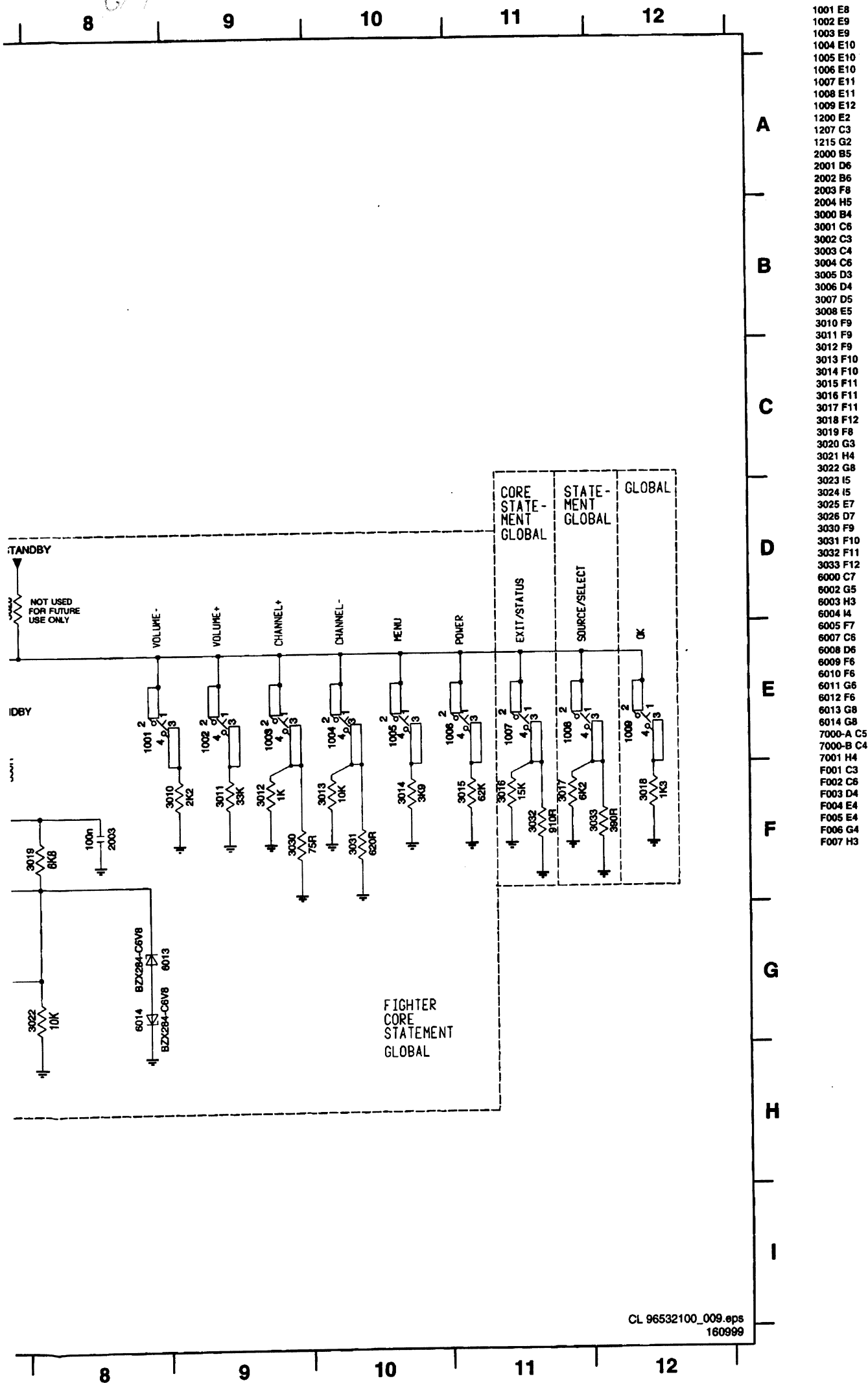


- 1033 B3
- 1064 C10
- 1066 G2
- 1304 D17
- 1333 A10
- 1333 A9
- 1364 G8
- 1366 D12
- 1370 H8
- 1372 B4
- 1373 D4
- 2035 B4
- 2036 H4
- 2037 G4
- 2038 H5
- 2039 G3
- 2040 E3
- 2041 E3
- 2042 I3
- 2043 H3
- 2044 H3
- 2046 G3
- 2047 D13
- 2048 D14
- 2048 D14
- 2050 D15
- 2054 D13
- 2055 D14
- 2056 F12
- 2057 B16
- 3062 I7
- 3063 H7
- 3064 I7
- 3065 F7
- 3066 F7
- 3067 F7
- 3068 G7
- 3069 G7
- 3100 H7
- 3101 H7
- 3102 I8
- 3103 F7
- 3104 F8
- 3106 G7
- 3106 G8
- 3107 I9
- 3108 I9
- 3108 F12
- 3110 Q12
- 3111 B3
- 3112 C4
- 3119 D12
- 3120 D13
- 3121 C15
- 3122 C16
- 3123 C16
- 3124 D16
- 3125 D15
- 3126 D16
- 3127 D14
- 3128 G4
- 3128 G4
- 3130 F12
- 3143 D16
- 3144 D12
- 3145 F13
- 3146 F13
- 3147 F13
- 3148 E12
- 3148 F14
- 3156 F12
- 3151 B15
- 4003 G2
- 4007 H2
- 4008 H2
- 4008 H
- 4010 E4
- 4011 G6
- 4012 G9
- 4013 G9
- 4014 G8
- 4041 H9
- 4042 F10
- 4043 F10
- 4044 F10
- 5002 B5
- 5003 D14
- 5004 D14
- 5005 D15
- 5006 C15
- 6025 C4
- 7005 F4
- 7012 I8
- 7013 F9
- 7014 G8
- 7027 D13
- 7028 D15
- 7029 D16
- 7035 F12
- 7036 G13
- 7037 F13
- 9010 B13
- 9011 B13
- 9012 B13
- 9014 C4
- F033 G2
- F034 G2
- F035 G2
- F036 G8
- F037 G8
- F038 G8
- F039 D12
- F040 D12
- F041 D17

CAPITANCE VALUES ARE IN FARADS:
 L1 MICRO n= NANO p= PICO f= FEMTO
 STANCE VALUES ARE IN OHMS:
 IM K=KILO M=MEGA G=GIGA T=TERA
 TTY TRIANGLE REPRESENTS PCIEC REPLACEMENT PART ONLY.
 ? VALUE SEE PARTS LIST.

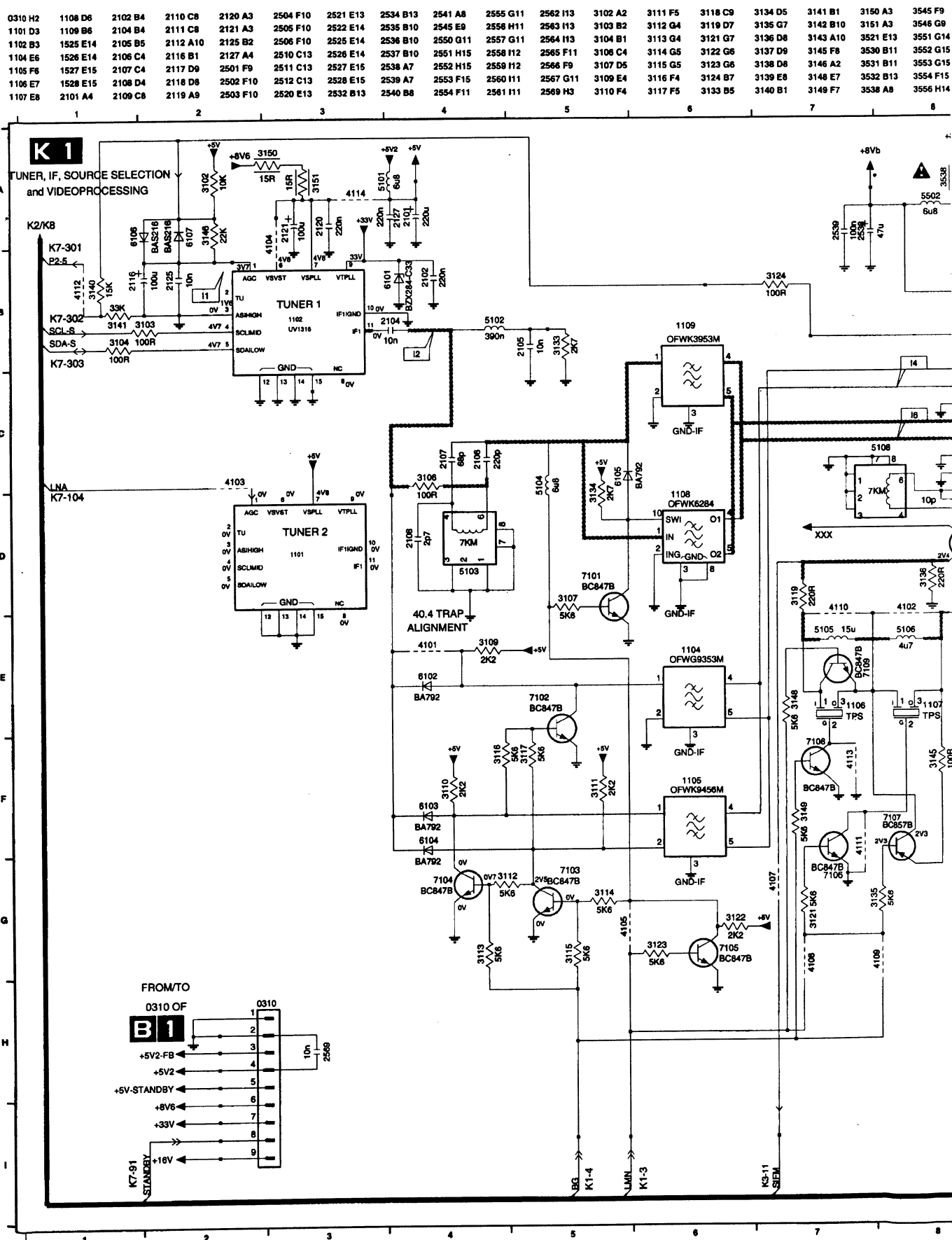
Customer control panel





1001 E8
1002 E9
1003 E9
1004 E10
1005 E10
1006 E10
1007 E11
1008 E11
1009 E12
1200 E2
1207 C3
1215 G2
2000 B5
2001 D6
2002 B6
2003 F8
2004 H5
3000 B4
3001 C6
3002 C3
3003 C4
3004 C6
3005 D3
3006 D4
3007 D5
3008 E5
3010 F9
3011 F9
3012 F9
3013 F10
3014 F10
3015 F11
3016 F11
3017 F11
3018 F12
3019 F8
3020 G3
3021 H4
3022 G8
3023 I5
3024 I5
3025 E7
3026 D7
3030 F9
3031 F10
3032 F11
3033 F12
6000 C7
6002 G5
6003 H3
6004 I4
6005 F7
6007 C6
6008 D6
6009 F6
6010 F6
6011 G6
6012 F6
6013 G8
6014 G8
7000-A C5
7000-B C4
F001 C3
F001 H4
F002 C6
F003 D4
F004 E4
F005 E4
F006 G4
F007 H3

SSP panel



63

3557 G11 3571 D14 4107 G7 4114 A3 5105 E7 5559 I12 6105 C5 7105 G6 7502 E8
3560 F8 3999 A6 4108 G7 4803 I9 5106 E8 5560 I11 6106 A1 7106 G7 7555 G15
3565 G10 4101 E4 4109 G8 4804 H10 5108 C7 5562 I12 6107 A2 7107 F8 7560 F12
3566 G10 4102 E8 4110 E7 5101 A4 5501 A8 6101 B4 7101 D5 7108 F7 7561 F11
3567 E11 4103 C2 4111 F7 5102 B4 5502 A8 6102 E4 7102 E5 7109 E7
3568 F11 4104 A3 4112 B1 5103 D4 5540 G10 6103 F4 7103 G5 7111 D9
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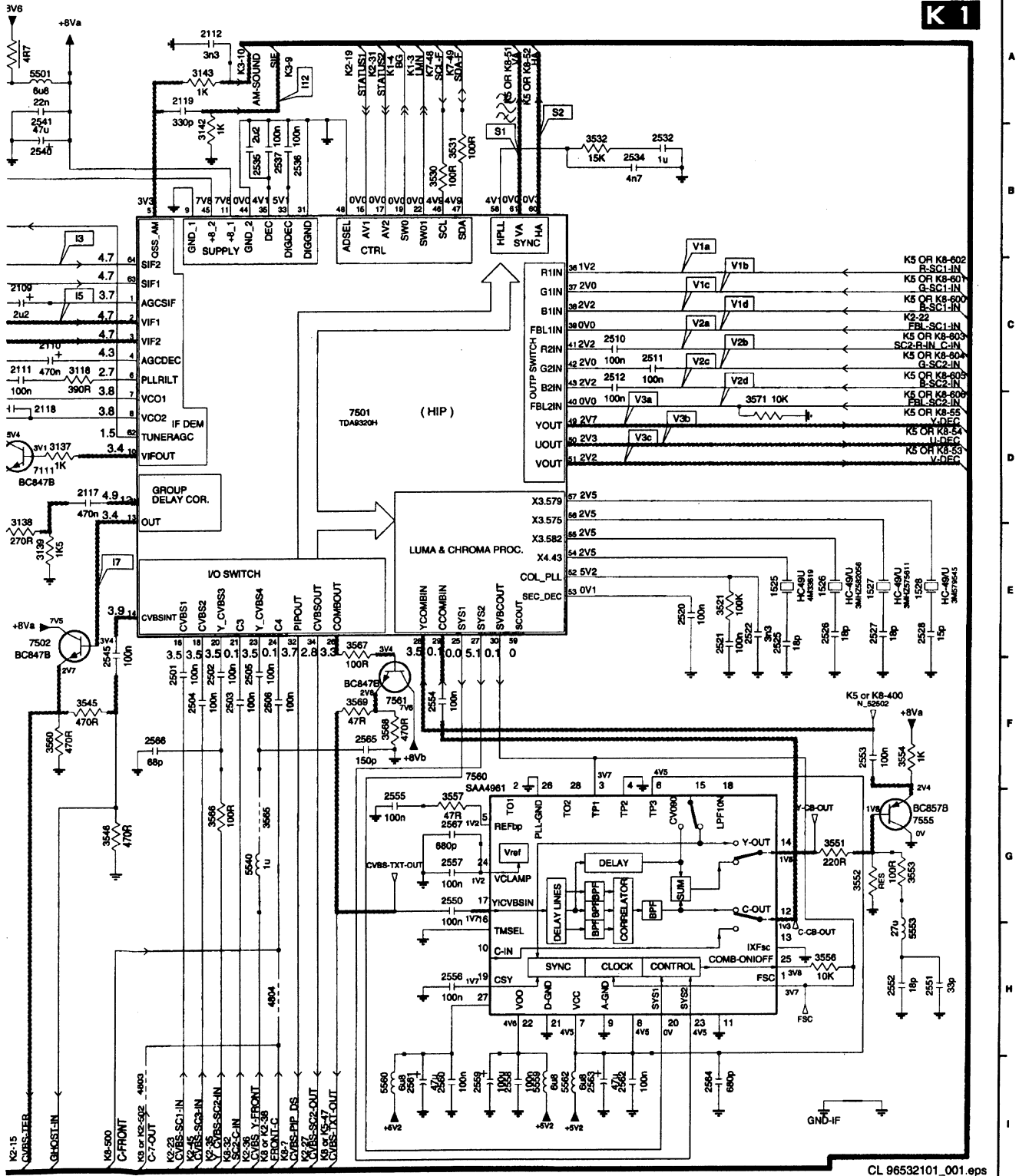
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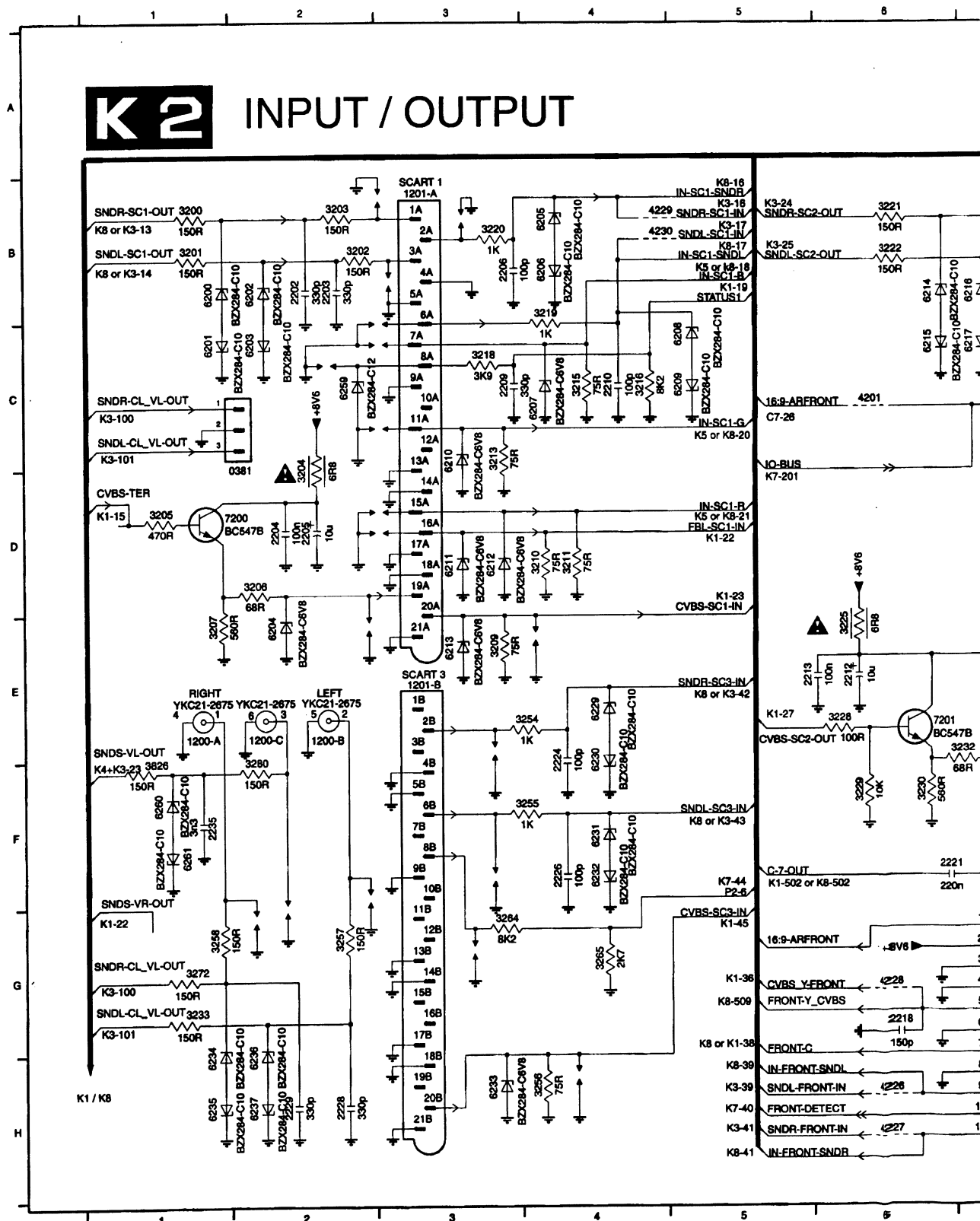


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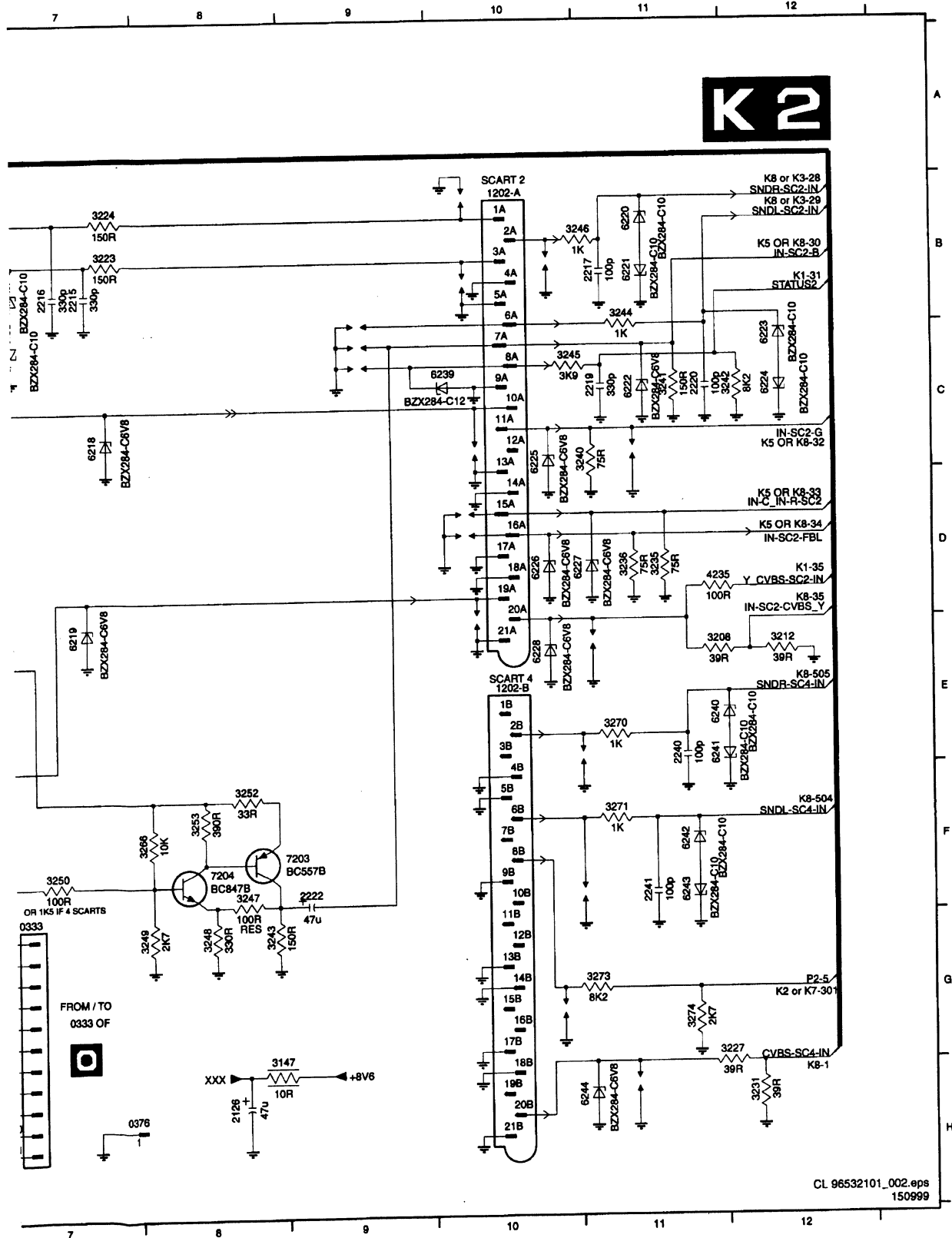
SSP panel

0333 G7	1202-B E10	2212 E6	2222 F9	3200 B1	3209 E3	3220 B3	3230 F6	3243 G8	3253 F8	3270 E11	4227 H6	6204 E2	621
0376 H8	2126 H9	2213 E5	2224 F4	3201 B1	3210 D4	3221 B6	3231 H12	3244 B11	3254 E4	3271 F11	4228 G6	6205 B4	621
0381 C1	2202 B2	2215 B7	2226 F4	3202 B2	3211 D4	3222 B6	3232 E7	3245 C10	3255 F4	3272 G1	4229 B4	6206 B4	621
1200-A E1	2203 B2	2216 B7	2228 H2	3203 B2	3212 E12	3223 B7	3233 G1	3246 B11	3256 H4	3273 G11	4230 B4	6207 C4	621
1200-B E2	2204 D2	2217 B11	2229 H2	3204 D2	3213 C3	3224 B7	3235 D11	3247 F8	3257 G2	3274 G11	4235 D11	6208 C5	621
1200-C E2	2205 D2	2218 G6	2235 F1	3205 D1	3215 C4	3225 E6	3236 D11	3248 G8	3258 G1	3280 F2	6200 B1	6209 C5	621
1201-A B3	2206 B3	2219 C11	2240 E11	3206 D2	3216 C4	3227 G12	3240 C11	3249 G8	3264 G3	3282 F1	6201 C1	6210 C3	621
1201-B E3	2209 C3	2220 C11	2241 F11	3207 E1	3218 C3	3228 E6	3241 C11	3250 F7	3265 G4	4201 C8	6202 B2	6211 D3	622
1202-A B10	2210 C4	2221 F6	3147 H8	3208 E11	3219 B4	3229 F6	3242 C12	3252 F8	3266 F8	4226 H6	6203 C2	6212 D3	622

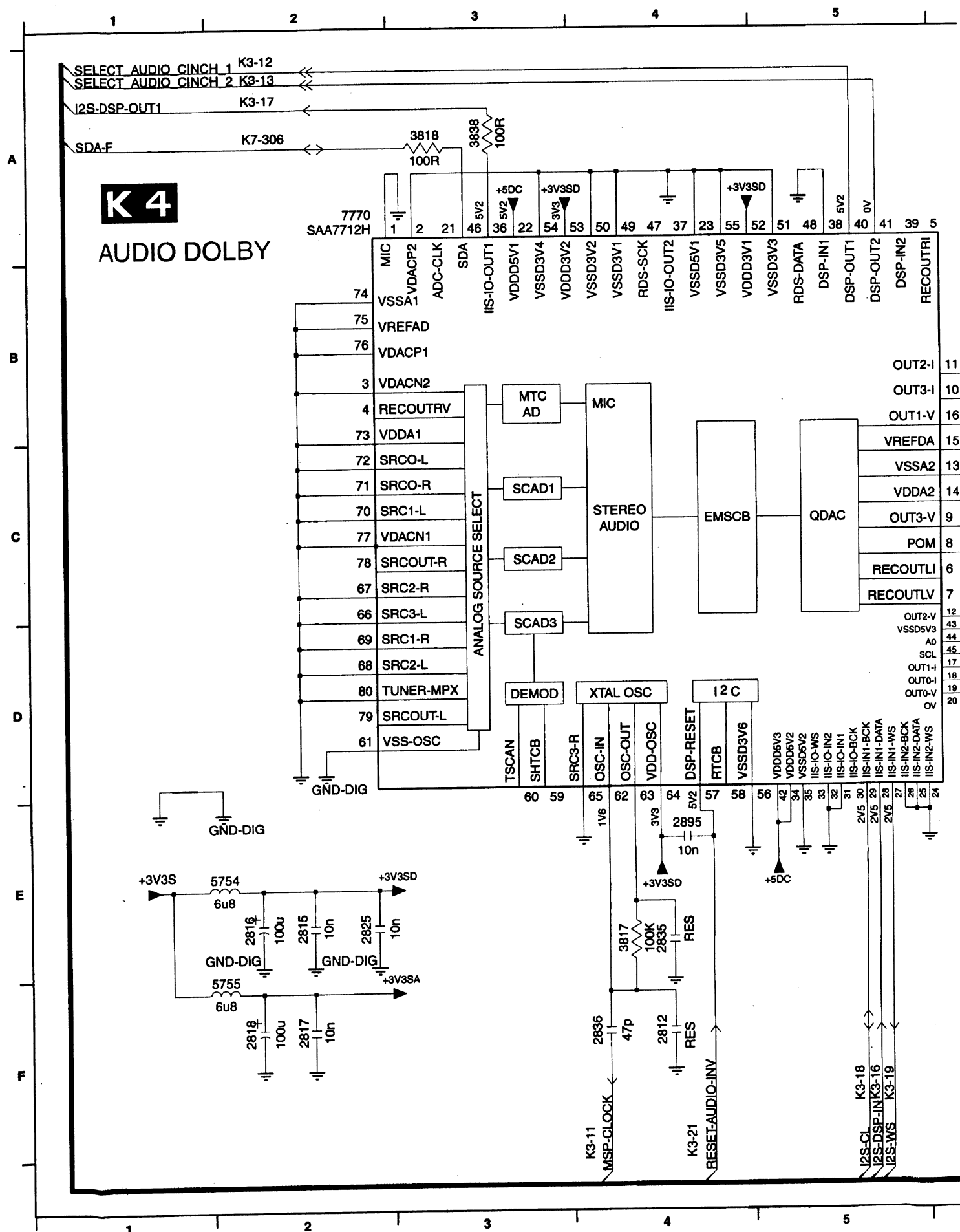


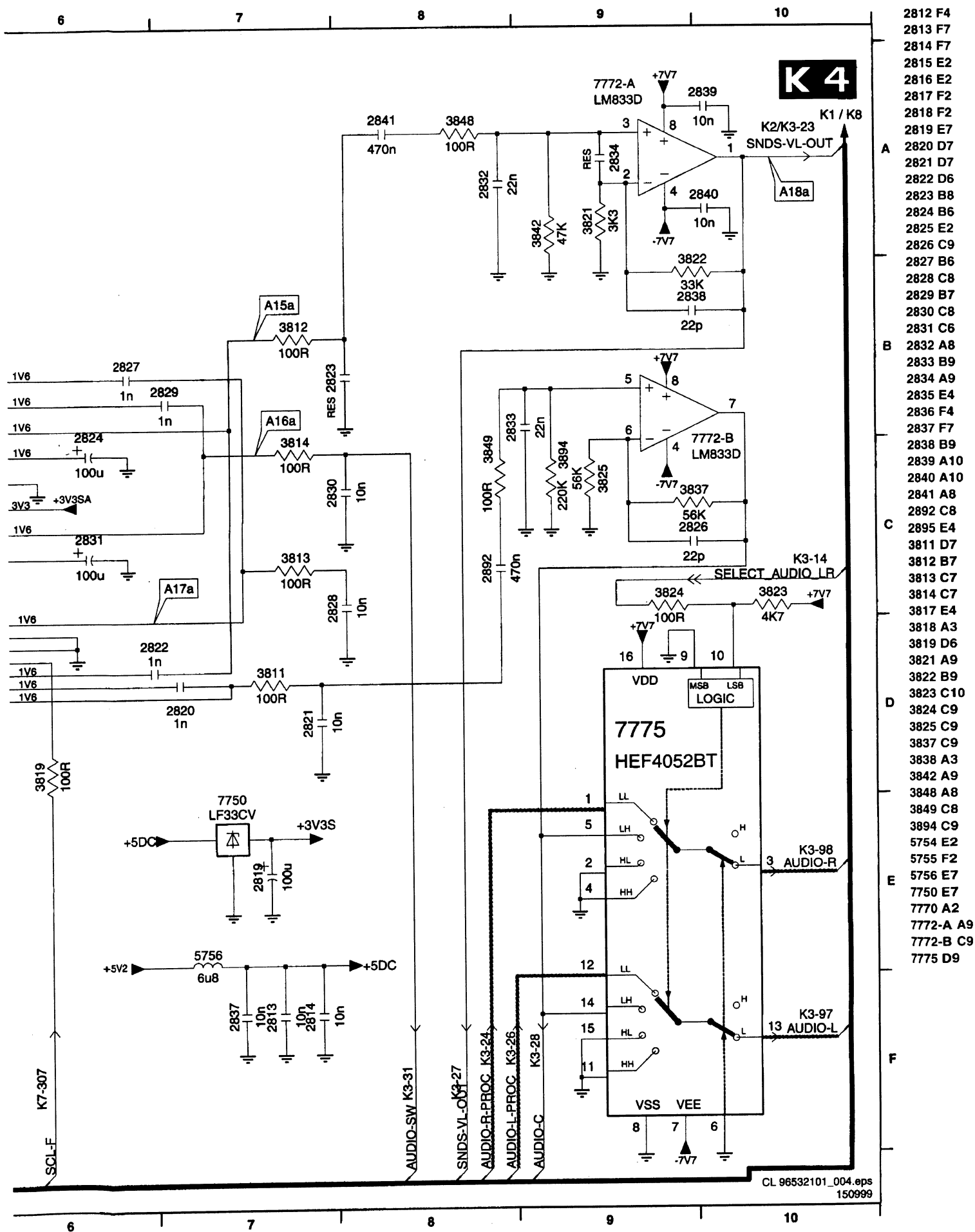
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3 E3	6222 C11	6231 F4	6241 E11	7203 F8
4 B6	6223 C12	6232 F4	6242 F11	7204 F8
5 C6	6224 C12	6233 H3	6243 H11	
6 B7	6225 C10	6234 H1	6244 H11	
7 C7	6226 D10	6235 H1	6259 C2	
8 C7	6227 D11	6236 H2	6260 F1	
9 E7	6228 E10	6237 H2	6261 F1	
0 B11	6229 E4	6239 C10	7200 D1	
1 B11	6230 F4	6240 E11	7201 E6	



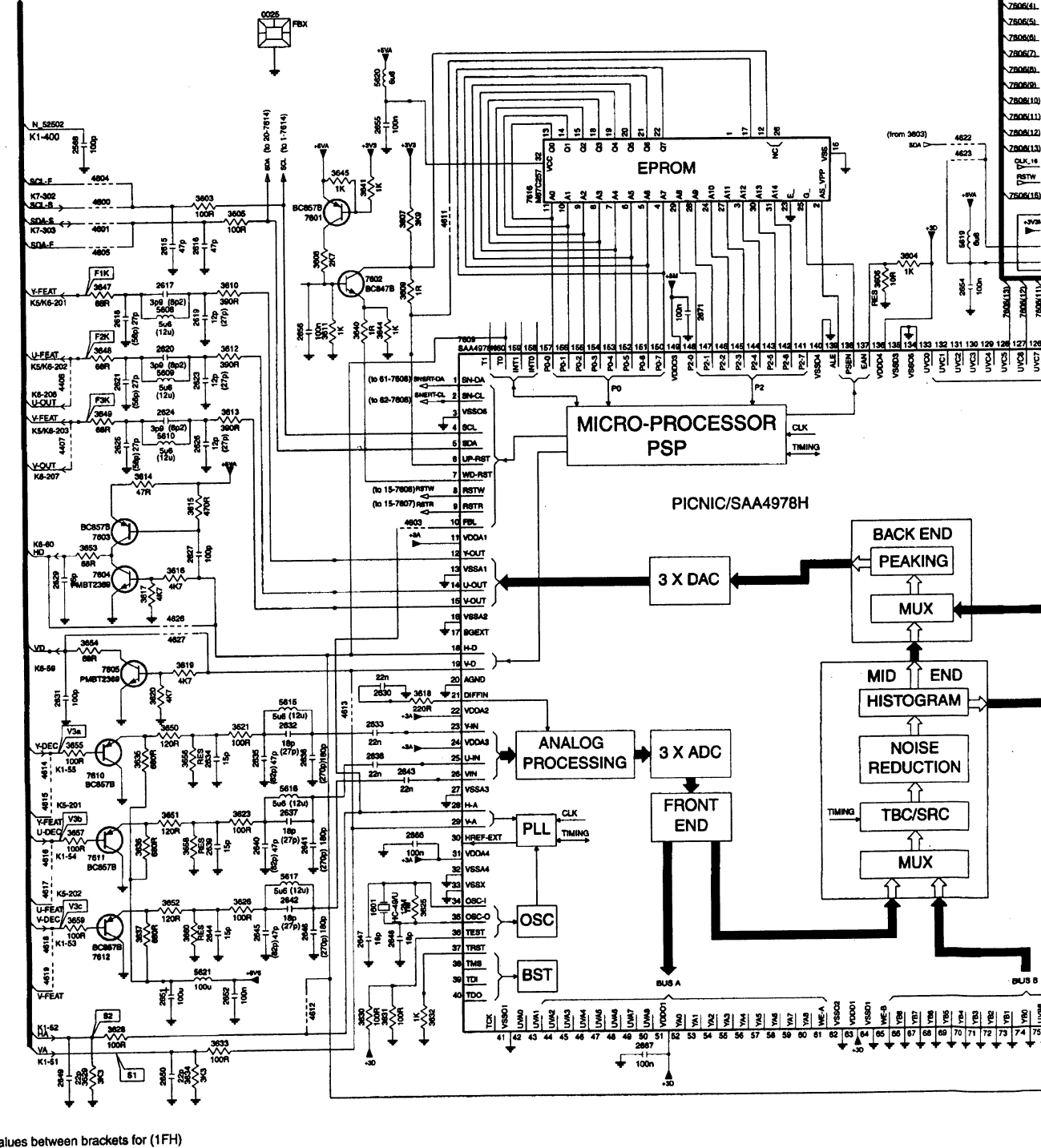
K 3

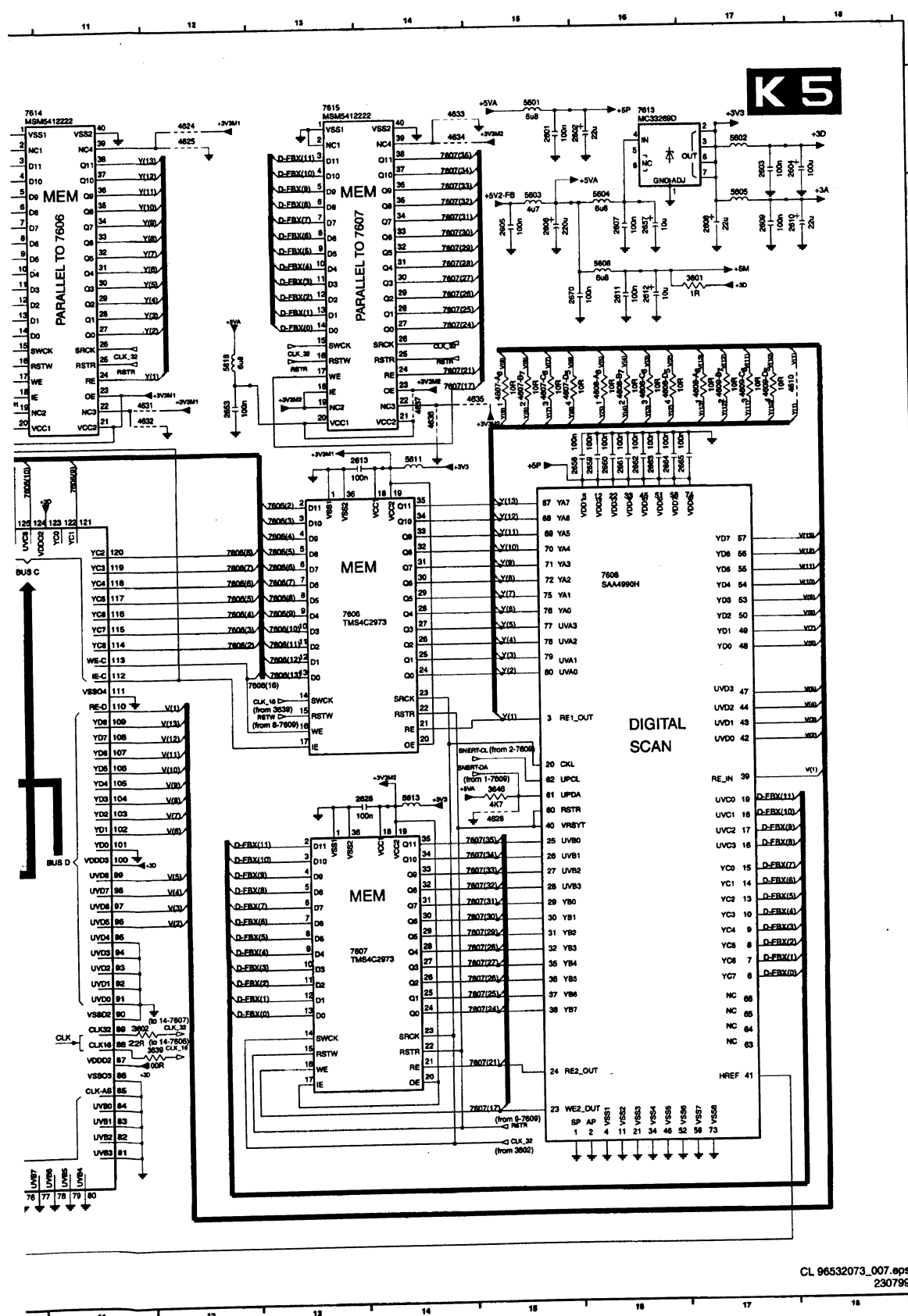




K 5

K1 / K7



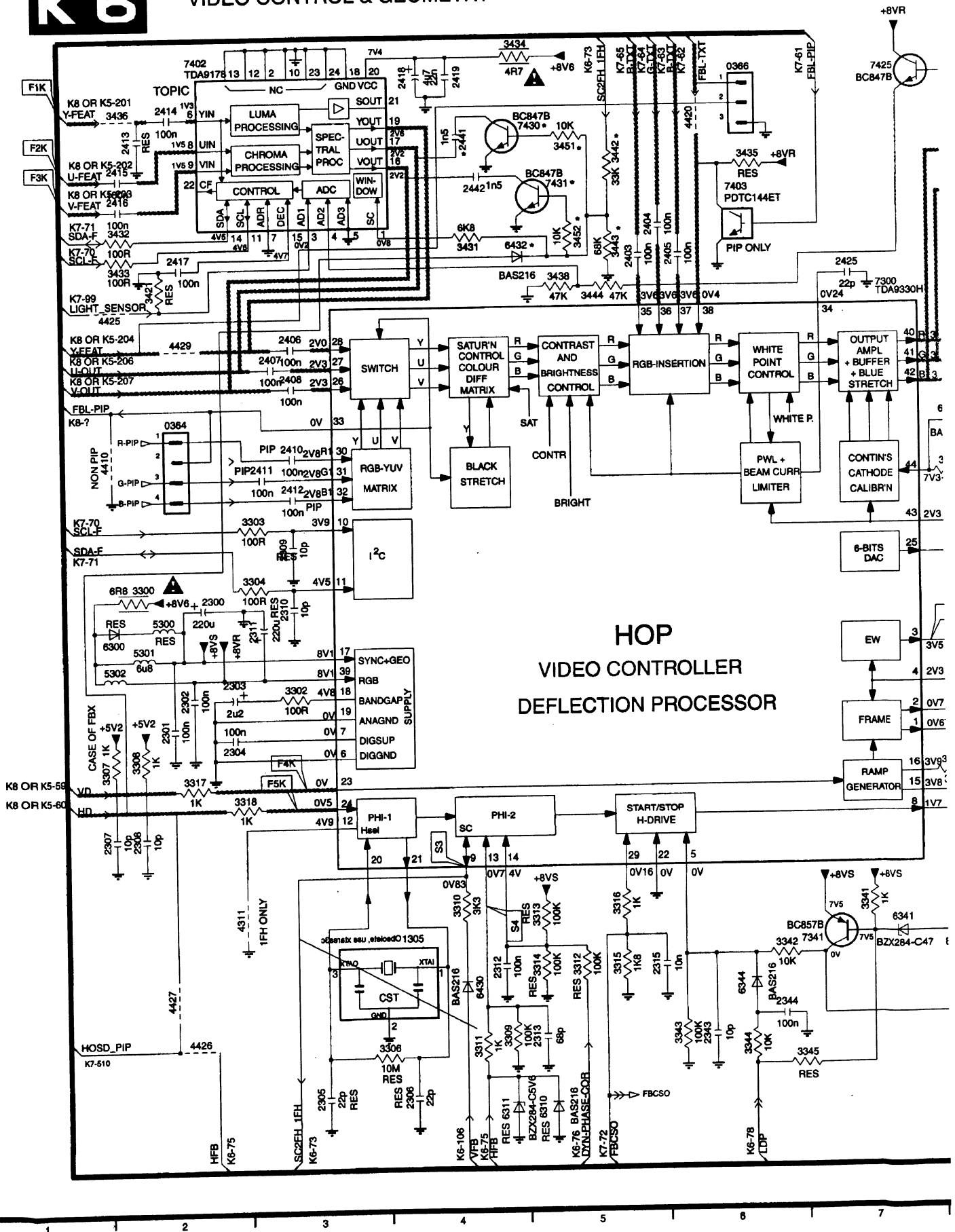


- 0023 B3
- 1801 J4
- 2507 A7
- 2508 A7
- 2509 A7
- 2508 C5
- 2501 A15
- 2502 A18
- 2503 A17
- 2504 A18
- 2508 B15
- 2508 B15
- 2508 B17
- 2509 B17
- 2510 B16
- 2511 C16
- 2511 C16
- 2512 D13
- 2515 D3
- 2516 D3
- 2517 D2
- 2518 D2
- 2519 D2
- 2520 E2
- 2521 E2
- 2523 E3
- 2524 E2
- 2525 E3
- 2527 F3
- 2528 G13
- 2529 G1
- 2530 H4
- 2531 H1
- 2532 H3
- 2533 H4
- 2534 H4
- 2535 H3
- 2536 H4
- 2537 H3
- 2538 H4
- 2539 H3
- 2540 H3
- 2541 H4
- 2542 J3
- 2543 H4
- 2544 J3
- 2545 J3
- 2546 J4
- 2547 J4
- 2548 J4
- 2549 K1
- 2550 K2
- 2551 J2
- 2552 J3
- 2553 D12
- 2554 D10
- 2555 C4
- 2556 D4
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- 2566 D16
- 2567 D16
- 2568 D16
- 2569 D16
- 2570 C16
- 2571 D7
- 2572 B A5
- 2573 C A5
- 2574 A A7
- 2575 B A7
- 2576 C A7
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- 2578 B5
- 2579 A6
- 2580 B17
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- 2586 D4
- 2587 C4
- 2588 D4
- 2589 D4
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- 2591 F2
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- 2596 H2
- 2597 H2
- 2598 H2
- 2599 H2
- 2600 H2
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- 2604 H2
- 2605 H2
- 2606 H2
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- 2617 H2
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- 2619 H2
- 2620 H2
- 2621 H2
- 2622 H2
- 2623 H2
- 2624 H2
- 2625 H2
- 2626 H2
- 2627 H2
- 2628 H2
- 2629 H2
- 2630 H2
- 2631 H2
- 2632 H2

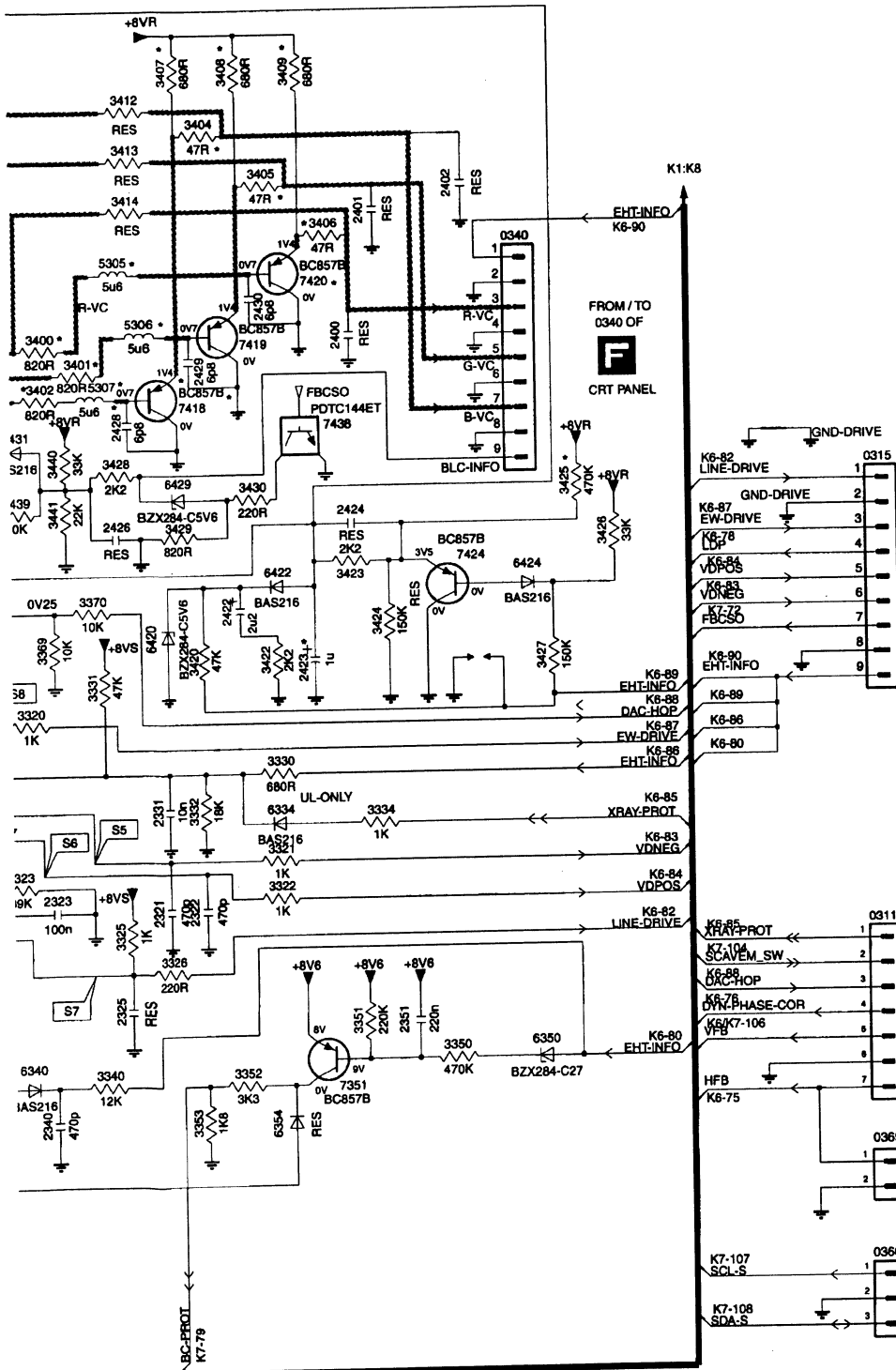
SSP panel

K 6

VIDEO CONTROL & GEOMETRY

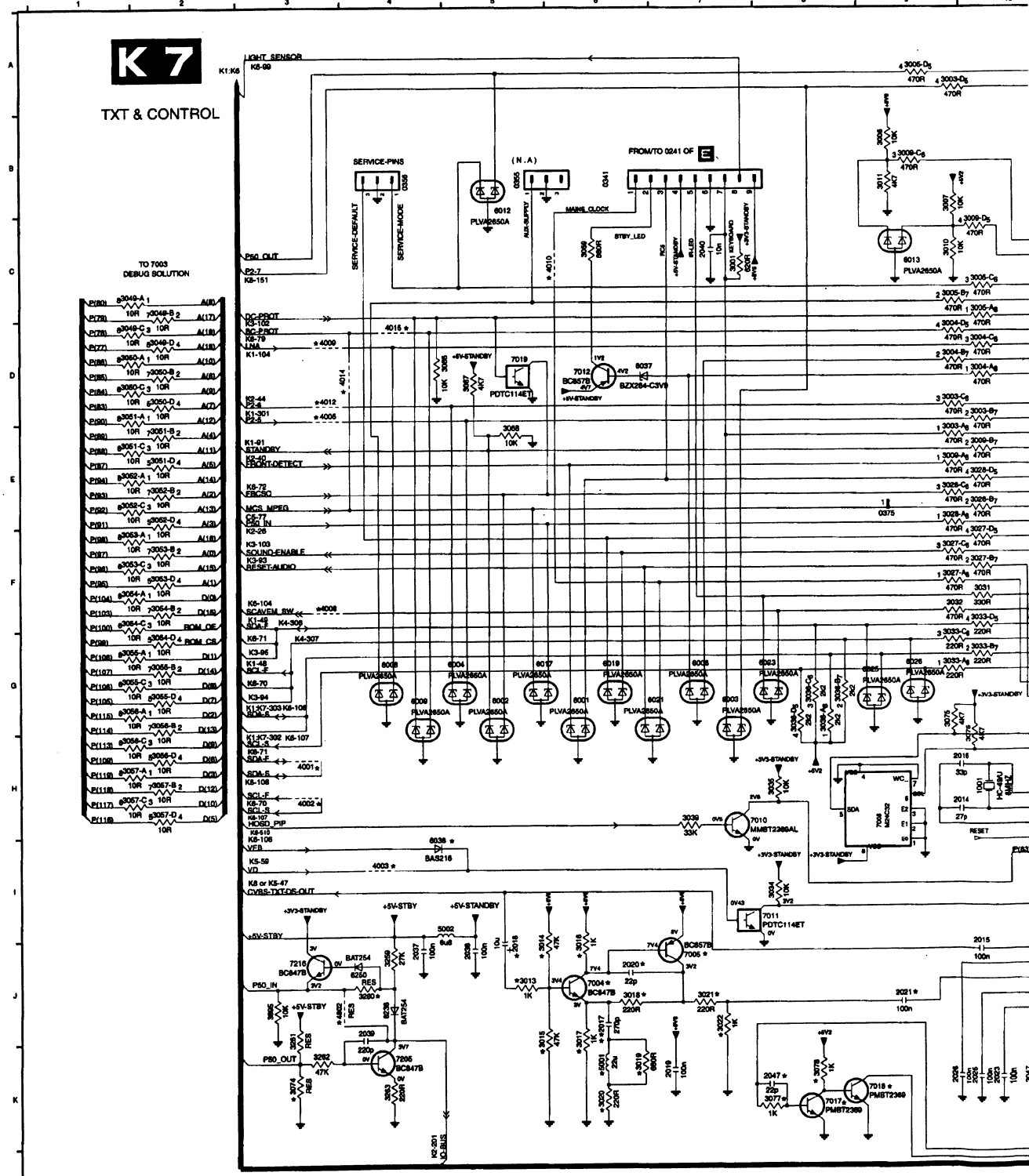


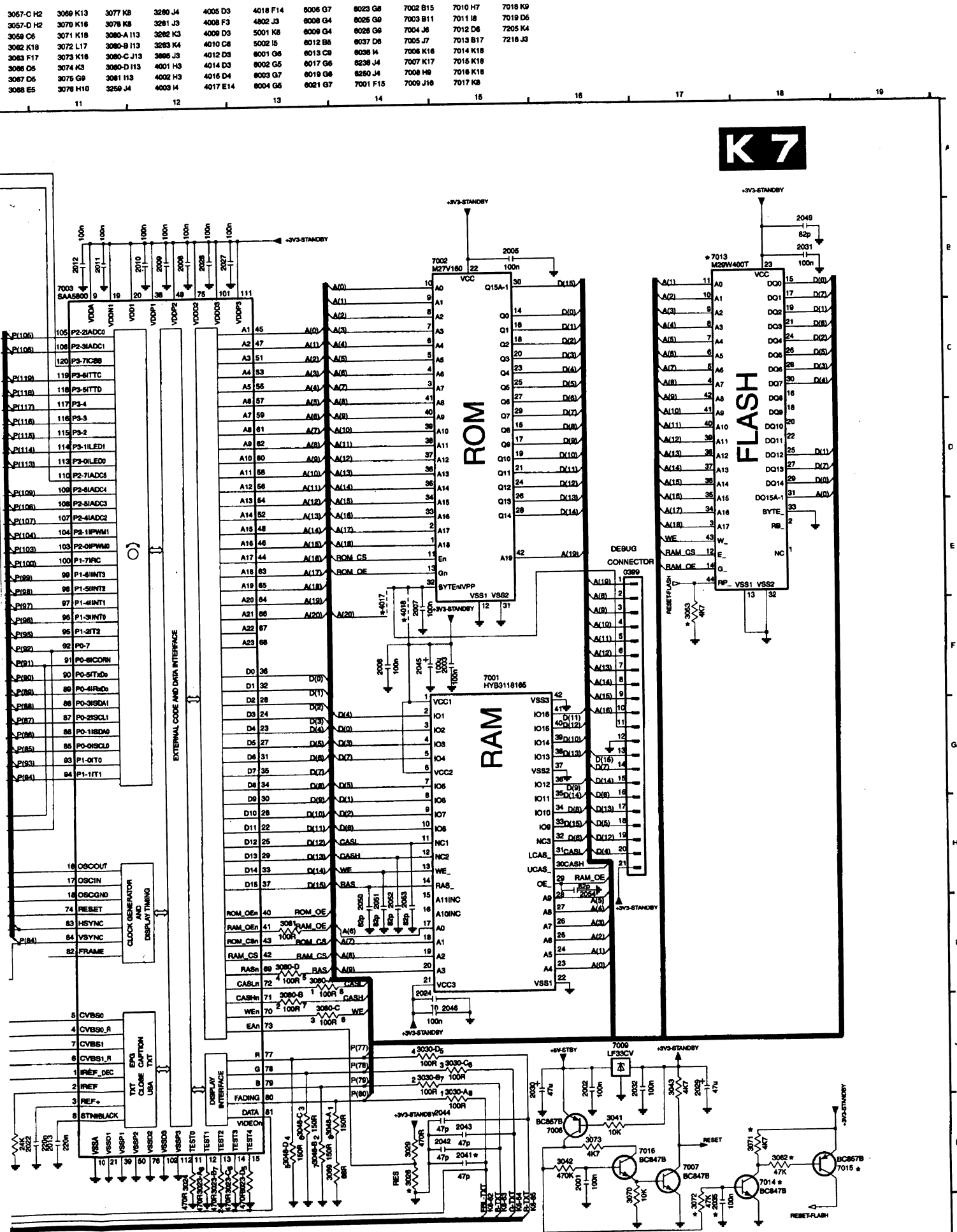
K 6



A	0311 G12	3331 E8	7402 A2
	0315 D12	3332 F9	7403 B6
	0340 C10	3334 F10	7418 D8
	0360 I12	3340 H8	7419 C9
	0364 D2	3341 G7	7420 C0
	0366 A6	3342 H6	7424 E10
	0369 H12	3343 H6	7425 A7
	1305 H4	3344 H6	7430 B5
	2300 E2	3345 H6	7431 B5
	2301 F2	3350 G10	7438 D9
B	2302 F2	3351 G10	
	2303 F2	3352 H9	
	2304 F2	3353 H9	
	2305 I3	3369 E8	
	2306 I4	3370 E8	
	2307 G2	3400 C8	
	2308 G2	3401 C8	
	2309 E3	3402 D8	
	2310 E3	3404 B9	
	2311 E3	3405 B9	
C	2312 H4	3406 C9	
	2313 H5	3407 B8	
	2315 H5	3408 B9	
	2321 G8	3409 B9	
	2322 G9	3412 B8	
	2323 G8	3413 B8	
	2325 G8	3414 C8	
	2331 F8	3420 E9	
	2340 H8	3421 C2	
	2343 H6	3422 E9	
D	2344 H6	3423 E9	
	2351 G10	3424 E10	
	2400 C9	3425 D11	
	2401 C10	3426 D11	
	2402 B10	3427 E11	
	2403 C5	3428 D8	
	2404 C5	3429 D8	
	2405 C6	3430 D9	
	2406 C3	3431 C4	
	2407 C3	3432 C2	
E	2408 D3	3433 C2	
	2410 D3	3434 A4	
	2411 D3	3435 B6	
	2412 D3	3436 B2	
	2413 B2	3438 C5	
	2414 B2	3439 D8	
	2415 B2	3440 D8	
	2416 B2	3441 D8	
	2417 C2	3442 B5	
	2418 A4	3443 C5	
F	2419 A4	3444 C5	
	2422 E9	3451 B5	
	2423 E9	3452 C5	
	2424 D9	4311 G2	
	2425 C7	4410 D2	
	2426 D6	4420 B8	
	2428 D8	4425 C2	
	2429 C8	4426 H2	
	2430 C9	4427 H2	
	2441 B4	4429 E2	
G	2442 B4	5300 E2	
	3300 E2	5301 F2	
	3302 F3	5302 F2	
	3303 E3	5305 C8	
	3304 E3	5306 C8	
	3306 H3	5307 D8	
	3307 F2	6300 E2	
	3308 F2	6310 I5	
	3309 H4	6311 I4	
	3310 G4	6334 F9	
H	3311 H4	6340 H8	
	3312 H5	6341 H7	
	3313 G5	6344 H6	
	3314 H5	6350 G11	
	3315 H5	6354 H9	
	3316 G5	6420 E8	
	3317 F2	6422 E9	
	3318 G2	6424 E10	
	3320 E8	6429 D8	
	3321 F9	6430 H4	
I	3322 F9	6431 D8	
	3323 F8	6432 C4	
	3325 G8	7300 C7	
	3326 G8	7341 H7	
	3330 F9	7351 H10	

0241-16	2023 F15	2012 B11	2020 J6	2028 B15	2038 J4	2047 K9	3003-A D10	3005-A C10	3006-C B8	3017 J6	3023-C K12	3028-A E9	3030-D J14	3035 H6	3043 J17	3048-C D2	3061-C E2	3063-C F2	3055-C G2
0355 B5	2023 F15	2013 K11	2021 J6	2029 J17	2040 C7	2048 B18	3003-A D10	3005-A C9	3006-C B10	3018 J6	3028-C K13	3028-E E10	3031-A G8	3036-A G8	3047 K10	3048-C D2	3061-C E2	3063-C F2	3055-C G2
0356 D4	2003 F14	2014 H10	2022 K10	2030 J15	2041 K15	2050 H14	3003-C D6	3006-C C10	3010 C9	3019 K8	3024 K12	3028-E E9	3032 F9	3036-B G8	3048-K K13	3050-A D2	3052-A E2	3054-F F2	3056-B G2
0375 E9	2007 F14	2015 J10	2023 K10	2031 B15	2042 K15	2051 H14	3003-D A6	3006-D A6	3011 B9	3020 K08	3028 K12	3028-E D10	3033-A G9	3035-C G6	3048-K K13	3050-B D2	3052-B E2	3054-F F2	3056-B G2
0390 E12	2008 B12	2016 H10		2032 J16	2043 K15	2052 H14	3004-A D10	3006-B B9	3013 J6		3025-A J17	3028-F F9	3030-K K13	3035-C G10	3036-B G8	3048-K K13	3050-C D2	3053-C E2	3056-B G2
1001 H10	2009 B12	2017 J6	2025 K10	2035 L17	2044 K15	2053 H14	3004-B D8	3007 B6	3014 J6	3022 J7	3028-K K15	3030-A H10	3034-D D12	3036-B G8	3048-K K13	3050-D D2	3052-A E2	3054-F F2	3056-B G2
2001 K16	2010 B12	2018 J5	2026 K8	2037 J4	2045 F14	2054 H16	3004-B D8	3009-B E9	3011 B9	3022-A J17	3028-F F9	3030-K K13	3033-D D10	3036-B G8	3048-K K13	3050-A D2	3052-A E2	3054-F F2	3056-B G2
2002 J16	2011 B11	2019 K7	2027 B12	2038 J5	2046 J16	2051 C7	3004-D D8	3009-B E10	3016 J8		3025-B K12	3027-D F10	3030-C J15	3034 H8	3042 K16	3048-C C2	3061-B E2	3063-B F2	3055-B G2





8. Electrical alignments

8.1 General alignment conditions

All electrical alignments should be made under the following conditions:

- Power supply voltage: 220-240V 10%; 50-60 Hz 5%.
- Warm-up time >15 minutes.
- Voltages and oscillograms are measured in relation to tuner earth (with exception to the voltages on the primary side of the power supply). Never use the cooling fins/plates as ground.
- Test probe: $R_i > 10 \text{ MOHM}$, $C_i < 20 \text{ pF}$.

8.2 Alignments on the Power supply panel

8.2.1 +130Vdc supply voltage

- Connect the positive lead of a voltmeter to the 130Vdc source (at the junction of 5304 and 5305).
- Connect the negative lead to the isolated "cold" ground.
- Using potentiometer R3322 adjust the 130Vdc supply voltage to +130Vdc 0V5.

8.3 Alignments on the Large Signal Panel

8.3.1 High Voltage Adjustment

Exercise extreme caution when adjusting high voltage.

Note: The following test equipment must be used:

High voltage probe

Digital multimeter with 1% (or better) dc accuracy and an input impedance of 10 Megohms 10%.

Initial settings:

- Turn the PTV on.
- Confirm that the 130V source (at the junction of 5304 and 5305) is 130V 0V5.
- Perform the 130Vdc adjustment if the voltage is not within specified limits.
- Select a non-used AUX input for a black picture.
- Turn the PTV off.

With the PTV off and unplugged, connect a Fluke Model 80K-40 (or equivalent) high voltage probe as follows and adjust the high voltage.

1. Connect the ground lead to the chassis ground.
2. Connect the high voltage probe to the digital multimeter.
3. Set the digital multimeter to measure dc volts.
4. Remove one of the CRT anode connections from the high voltage splitter.

Note: Make sure that 3973 is turned fully clockwise.

1. Insert the probe tip into the open CRT anode connection of the high voltage splitter
2. Turn the set on.
3. Adjust 3973, High Voltage Adjust, on the Large Signal Panel for a reading of 30kV 200V.
4. Turn the set off.
5. Remove the high voltage probe.
6. Reinstall the CRT anode connector.
7. Turn the set on and confirm proper operation.

8.3.2 High Voltage Frequency Adjustment

1. Turn the set off and disconnect the ac-input power.
2. Disable the high voltage by shorting the collector of 7952 to ground.
3. Disable the sync input to 7900 by shorting the base of 7952 to ground.
4. Connect a frequency counter to pin 1 of 7900.

5. Turn the set on and adjust 3902 to obtain a reading of 31.25kHz on the frequency counter.

6. Turn the set off and remove the short circuits and the frequency counter.

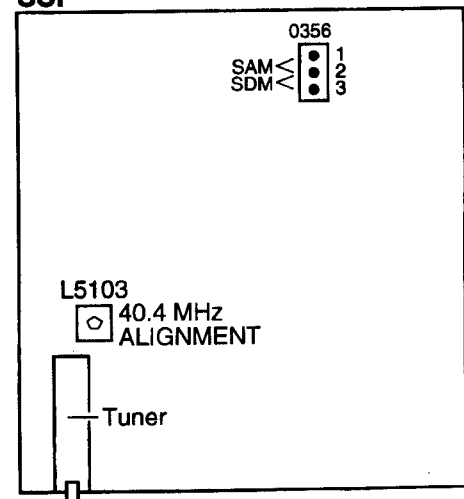
Note: Some frequency counters may be too sensitive at one attenuation level and not sensitive enough at another. In this case, an oscilloscope may be used. Adjust 3902 to obtain a delay of 63.5S from the leading edge of the first main pulse to the leading edge of the second main pulse.

8.4 Alignments on the small signal panel (SSP)

8.4.1 40.4 MHz neighbour-channel sound trap

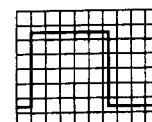
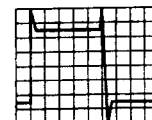
- Tune to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz).
- Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the scart1 connection.
- Align the coil L5103 (diagram K1) completely downwards (see Fig. 8.1).
- Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (Fig. 8.2).
- Align the coil downwards again till above mentioned under- and overshoot is just disappeared.

SSP



CL 86532057_004a.AI
240798

Figure 8-1



CL 86532057_006.AI
170798

Figure 8-2

8.5 Alignments needing SAM-mode + measuring equipment

(These alignments could be of interest when ICs (7501, TDA9320H), or the EAROM (7008, ST24E16) are exchanged on the SSP.)

8.5.1 'IF AFC' (navigation to this menu item via Alignment --> General --> IF AFC)

- During the 'IF AFC'-parameter adjustment one can see OSD feedback on the screen.
- The OSD feedback can give 4 kind of messages:

AFC-window	AFC-frequency versus reference
Out	High
In	High
In	Low
Out	Low

The first item (in or out) informs you whether you are in or out the AFC-window

The second item (high/low) informs you about whether the AFC-frequency is to high or to low

- First you must align the 'IF AFC'-parameter such that you come into the AFC-window (= 'in')
- Then you must look for the point where the 'IF AFC'-parameter influences the high/low message. This level is the value you are looking for.

Service-tip: If you do not trust the accuracy of the frequency of your Service-generator, first 'measure' with 'Fine tune'-line (manual install-menu) of a good set your Service generator.

8.5.2 'Tuner AGC'

Supply a TV-signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV. Measure the DC-voltage on pin 1 of the Tuner (position 1102). With the 'Tuner AGC'-alignment in the SAM-menu, this voltage can be aligned. Alignment is correct when DC-voltage is just below 3.8 V

8.6 Alignments and settings in the Service Alignment Menu

8.6.1 General

Entering the SAM can be done in 2 ways:

- Briefly shorting the service pins 'SERVICE ALIGNMENT MODE' on the front side of the SSP (pins 1 and 2 of connector 0356) or:
- Pressing the key on the Dealer Service Tool (DST) (RC7150), followed by keying in the password "3140" and then pressing the key.

The Service Alignment Mode menu will now appear on the screen. The following information is now displayed:

1. The software date ('Date') and version ('ID.') of the ROM (Example: MG51E11.0_01501). (This software-code stands for MG51 (chassis), E for Europe, 1-language, 1.0 software version, xxxxx latest 5 digits of 12nc code software.)
2. The accumulated total of operation hours ('Operation Hours').
3. ('Errors') followed by maximal 10 errors. The most recent error is displayed at the upper left. For explanation errors see chapter 5 (table 5.1).
4. ('Defect. Module'). Here the module that generates the error is displayed. (If there are multiple errors in the buffer that have not all been generated by a single module, there

is probably another defect. The message 'Unknown' will then be displayed here).

5. ('Reset Error Buffer'). The error buffer can be reset by pressing the key.
6. ('Functional Test'). All devices are tested via the key. Eventual errors are displayed in the error buffer. The error buffer is not erased, the contents return when the Functional Test is terminated.
7. ('Alignments'). This enables the Alignments sub-menu to be called up.

The following alignments can be selected:

'General':

- 'Drive'
- 'Luminance Delays'
- 'EHT Compensation'
- 'Soft Clipper'
- 'Luma Gain'
- 'IF AFC'
- 'Tuner AGC'
- 'Blend Intensity'
- 'Adjust Peak White Limiter'
- 'Vg2 Test Pattern'
- 'G2 Setup'
- 'AKB'

'Normal Geometry':

- General geometry alignments.

'Super wide geometry': (only valid for widescreen sets)

- Geometry alignments for the 'Super Wide' position in 16:9 sets (only valid for wide screen sets; alignments can be performed, however, it is better to set values as mentioned below).

'Options':

- Setting the initialisation codes in the set via text.

'Option number':

- All options together, expressed in two long numbers. The original factory setting for these numbers can be found on the picture tube sticker on the inside of the set.

'Store':

- Store all alignments.

The alignments are explained now in the sequence of the sub-menu:

8.6.2 General alignments in Service Alignment Menu:

- Once all alignments/settings have been completed the item 'Store' must be selected to record all the values in the permanent memory of the set.
- If the option codes have been changed and stored, the set has to be switched on and off using the mains switch to activate the new settings (when switching on and off via Standby, the option code settings are NOT read by the microprocessor).
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default (standard) values.
- A built-in test pattern can be called up in various sub-menus. The test pattern generator can be switched on using the item 'Test pattern on/off'. The test pattern only appears AFTER the specific alignment has been selected. The test patterns are generated by the teletext-IC.

'Drive'

1. Remove the Light Barrier in order to view the Main Lens Output from each tube.

Note: Any dust should be removed from the Output Lenses, Mirror and backside of the Screen with a soft cloth.

1. Apply a Black Level video pattern to the antenna input.
2. Turn all the G2 controls counterclockwise.
3. While looking directly into the tubes, set each G2 control to produce a barely visible picture on the CRT.
4. Set "Cathode" to 6.
5. Select "Green" and set the value to 32.

6. Select "Tint" and switch this to normal.
7. Apply a Gray scale pattern to the antenna input.
8. Adjust the Red and Blue drives to obtain the correct Gray scale.
9. Reset the "Tint" to Warm.
10. Add 4 to the value of the "Red" and subtract 7 from the value of the "Blue".
11. Reset "Tint" to Cool.
12. Subtract 3 from the value of the "Red" and add 3 to the value of the "Blue".
13. Return to the "Alignments" menu and "Store" the new settings.

Tint-settings:

In table below an indication of the three tint settings 'Normal', 'Warm' and 'Cool' is given.

	Cool	Normal	Warm
R	10	13	17
G	32	32	32
B	17	14	7

'Luminance delays'

With the 'Luminance delays' alignment the luminance information is placed on the chrominance information (brightness is pushed onto the colour). Use a colour bar/grey scale pattern as test signal.

- Lum. Delay Pal: Apply a PAL colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
- Lum. Delay Secam: Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
- Lum. Delay Bypass: Apply a NTSC colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Bypass' until the transients of the colour part and black and white part of the test pattern are at the same position.

'EHT compensation'

Fixed value: 0

'Soft clipper'

Fixed setting: 'Pwl+0%'

'Luma gain'

Fixed value: 1

'IF AFC'

See chapter 8.5.1. The SAM-mode is needed to make alignment, a test generator to make signal, an oscilloscope to measure at SCART-output and the Install-menu to check fine-tuning-value.

'Tuner AGC'

See chapter 8.5.2. The SAM-mode is needed to make alignment, a test generator to make signal, a DC-Voltmeter to measure at pin 1 of Tuner.

'Blend intensity'

(This alignment could be used when micro controller or HOP-IC has been replaced). It aligns the level of transparency of the menu-picture blended into the main-picture.

- Position the brightness-, contrast- and colour-setting in the middle-position. (picture-menu).
- Apply a signal with a 100 % white video-pattern
- Connect an oscilloscope to pin 3 of connector 0340 of the CRT panel and measure the Red output level

- Align 'blending intensity'-parameter such that the blended signal is 65 % of the black-white amplitude. Practically this will be about 1.3 V (blended signal) versus 2 V (full white signal).
- The parameter can be adjusted in between 0 and 31.

'Peak White Limiter'

The next value for 'Peak White Limiter' must be entered: 10

'VG2 Test Pattern'

Not applicable

'G2 Setup'

Not applicable

'AKB'

Select AKB and switch to "ON".

8.6.3 Geometry alignments 'Normal Geometry' in the Service Alignment Menu

Warning:

At this moment the INTERNAL test pattern of the set will lead to a misaligned geometry of the picture. Please do not use internal test pattern. When using a service generator with a geometry-pattern (e.g. a crosshatch-pattern), the set can be aligned without problems.

Note: First defeat the Convergence drive by shorting the two pins on connector 1033 on the Convergence Panel.

Typical values for the Normal Geometry alignments are:

V Slope36
V. Shift32
V. Amplitude46
V S-Correction12
H. Shift24
H. Amplitude20
East/West Parabola40
East/West Corner13
East/West Trapezium24
Horizontal Parallelogram30

Vertical amplitude and centring

Select 'Test Pattern ON' and set the begin conditions:

- Vertical S-correction value on 12.

The boundary-stripes of the test pattern should be positioned on the edge of the picture tube.

1. Align 'V slope' (when aligning the below half of the picture is blanked). The middle line of the test pattern must be matched with the edge of this blanking/picture transient in the middle of the picture. Pushing button again, gives you previous menu again. (This alignment is meant to align the zero-crossing of the frame-deflection to the mechanical middle of the picture tube.)
2. Align the vertical amplitude using 'V amplitude' so that the test pattern is fully visible.
3. Align the vertical centring using 'V shift' so that the test pattern is located vertically in the middle.
4. If necessary repeat the alignment of 'V amplitude', in order to get 'V shift' OK.

Vertical S correction

Select 'Test pattern on'.

Align the vertical S correction using 'V S-correction' so that the vertical amplitude at the top of the picture is equal to the amplitude in the middle of the picture.

Horizontal centring and amplitude

Select 'Test pattern on'.

1. Using 'H amplitude' align the horizontal amplitude so that the entire test pattern is visible.

2. Use an external test signal, with a centre-reference from a service-generator. Use 'H shift' to align the picture horizontally in the middle.
3. Repeat the 'H amplitude' alignment if necessary.

East/west alignment

Select 'Test pattern on'.

1. Use 'East/West Parabola' to align the vertical lines until straight.
2. Use 'East/West Corner' to align the vertical lines in the corners until straight.
3. Use 'East/West Trapezium' to align for a rectangular.
4. Use 'Horizontal Parallelogram' to align for straight vertical lines if necessary.
5. If necessary select 'East/West Corner' and align as required.
6. Repeat steps 1 to 4 if necessary.

8.6.4 Geometry alignments 'Super wide geometry' in the Service Alignment Menu

Only applicable to 16:9 sets.

Typical values for the Super Wide Geometry alignments are:

V. Shift 32

V. Amplitude 28

V S-Correction 12

H. Correction 18

East/West Parabola 40

The header of this paragraph and also the menu's are misleading. We only need to set the following values, if the normal geometry alignment has been performed correctly.

- Vertical S correction: enter value here of normal geometry.
- East/west parabola: enter value here or normal geometry.

8.7 Option menu

Introduction:

The microprocessor communicates with a large number of I2C-ICs in the set. To ensure good communication and make digital diagnosis possible, the microprocessor has to know which ICs have to be addressed. The presence of specific ICs or functions is made known by means of the option codes.

All options codes can be manipulated using both the option numbers and/or the Option menu.

All hardware related options are incorporated under the heading 'Options' of the 'Alignments' sub-menu of the 'Service Alignment Mode'. All software related options that are incorporated under the heading 'Dealer Options' of the 'Service Alignment Mode', can also be reached directly via the 'button of the DST.

8.8 Options in the Service Alignment Mode

Menu-item	Subjects	Options	Physically in the set
Dual screen/PIP	Aux type	None	
		Video Dual Screen	
		PIP	
	Text dual screen	Yes	Text dual screen present (only valid for 16:9 sets)
		No	Text dual screen not present
Teletext/EPG	TXT	Yes	Teletext present
		No	Teletext not present
	NextView present	Yes	NextView set
		No	NextView not set
	NextView type	Flashram	IC7013 present on SSP (diagram K7)
		No Flashram	IC 7013 not present on SSP (diagram K7)
Communication	Easylink Plus	Yes	Easylink Plus set
		No	Easylink Plus not set
Picture tube	CRT Type	4:3	4:3 picture tube
		16:9	16:9 picture tube
	Picture Rotation (only for 16:9)	Yes	Frame rotation circuitry present on LSP (IC7440 diagram A3)
		No	Frame rotation circuitry not present (IC7440 diagram A3)
	Dynamic Focus	Yes	Dynamic focus picture tube present
		No	Dynamic focus picture tube not present
Video Repro	Feature box type	Eco	IC7606 present on SSP (diagram K5)
		Prozonic	IC7606 and IC7607 present on SSP (diagram K5)
		Falconic	
	Field memories (only with falconic)	2	
		3	
	Lightsensor	Yes	
		No	

Menu-item	Subjects	Options	Physically in the set
	PALplus	Yes	
		No	
	Combfilter	Yes	IC7560 present on SSP (diagram K1)
		No	IC7560 not present on SSP (diagram K1)
	Picture improvement	Yes	
		No	
	Picnic AGC	Yes	In normal operation: Yes
		No	During 'Drive' alignments: No
	Signalling bits	Yes	
		No	
Source Selection	External 3	Yes	3rd EURO connector present
		No	No 3rd EURO connector present
	External 4	Yes	4th EURO connector present
		No	No 4th EURO connector present
Audio Repro	Dolby	None	
		Pro Logic	
		Digital	MCS-module present
	Rear speakers	Corded	
		Virtual	
		Cordless	Active surroundbox present
	Acoustic system	FL7	Applicable for sets with subwoofer
		FL8	Applicable for sets without subwoofer
		FL9	Monitor look
Miscellaneous	Heatsink Present	Yes	Heatsinks present on CRT/Scavem panel (diagram F)
		No	Heatsinks not present on CRT/Scavem panel (diagram F)

8.9 Dealer Options in the Service Alignment Mode

Menu name	Subjects	Options	Physically in set
Picture options	CTI	Yes	CTI enabled
		No	CTI disabled
Personal	Blue Mute	Yes	Blue mute active in case no picture detected
		No	Noise in case of no picture detected
	Virgin Mode	Yes	TV starts up once with language selection menu after mains switch on for the first time (virgin mode)
		No	TV does not starts up once with language selection menu after mains switch on for the first time (virgin mode)
	Auto store mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	Demo Mode Enable	Yes	Demo mode enable
		No	Demo mode disable
	Auto TV	Yes	Auto TV mode enabled
		No	Auto TV mode disabled
Teletext	TXT Preference	TOP	Preference to TOP teletext
		FLOF	Preference to FLOF teletext
	East/West TXT	West	TXT characters for non -/58 sets
		East	TXT characters for -/58 sets

- After the option(s) have been changed, they must be stored via the STORE command.
- The new option is only active after the TV is switched off and then back on again using the mains switch (the EAROM is then read out again).

8.10 'Option number'

In case the EAROM has to be replaced, all the options will also require resetting. To be certain that the factory settings are reproduced exactly, both option numbers have to be set. These numbers can be found on a sticker on the picture tube. Option number 46PP9105 and 55PP9105 is:
00713 12678 04545 00016
12343 00001 00000 00000

8.11 Convergence Alignment

Warm the set up for at least 20 minutes prior to making any Geometry or Convergence adjustments. Sit directly in front of and at least 2 to 3 meter away from the front of the screen while performing convergence alignments. Also ensure that you are always at eye level with the area of the screen you are adjusting.

Digital Convergence alignments are interactive. A change in one quadrant will affect adjacent areas of the screen. Several passes through the convergence sequence may be necessary. When performing convergence alignments, it is advised to always follow the sequence pattern when going from one adjustment location to another. Pressing the Cursor Right key will sequence the Icon through the preloaded pattern. A convergence board severely out of convergence will not necessarily have perfect Icon shapes.

A Complete in-depth Convergence will be required if the Convergence module or Convergence Memory IC has been replaced.

The correct signal for the mode being adjusted must be applied to the set when performing Geometry or Convergence alignments. Convergence alignments must be performed twice, one time for an NTSC signal, and then for PAL or SECAM. The NTSC signal can only be applied through the External inputs.

8.11.1 Screen centering

1. Apply a PAL, SECAM, or NTSC signal to the set (NTSC Signal can only be applied to the External inputs).
2. Put the picture in the 16:9 mode.
3. Select the "Convergence Mode" in the alignment menu.
4. Select "Convergence Selection" in the Convergence menu.
5. Select "Green" in the Convergence Selection Menu.
6. Defeat the Convergence drive by shorting the two Pins on connector 1033 located on the Convergence panel.
7. Place the Convergence Template over the screen.
 - 46": 3122 785 90002
 - 55": 3122 785 90003
8. Using the Centering rings on the Green CRT, center the convergence pattern onto the center point of the Convergence Template.
9. Return to the Convergence Selection menu.
10. Select "Red to Green" in the service menu.
11. Center the Red pattern onto the Green pattern for each quadrant of the screen.
12. Return to the Convergence Select Menu.
13. Select "Blue to Green" in the service menu.
14. Center the Blue pattern onto the Green pattern.
15. Remove the jumper from connector 1033.
16. Return to the Convergence Selection
17. Menu.

8.11.2 Green Geometry

Green Geometry

1. Make sure the set is placed in 16:9 mode. Ensure that the proper signal (PAL, SECAM, or NTSC) for the mode being tested is applied to the set.

2. Perform the procedure for PAL or SECAM, repeating the convergence procedure for NTSC will then be required.
- Note: Do not repeat Screen Centering. It is necessary to perform Screen Centering for one mode only.

1. Select "Convergence Selection" in the Convergence Mode Menu.
2. Select "Green" in the "Convergence Selection" Menu.
3. Press the "OK" button on the DST or the Menu Select button on the consumer remote to adjust the Icon.

Note: Move the Icon toward the adjustment point on the Template for no more than 4 seconds in any direction.

1. When you are satisfied with the current location of the Icon, press the "OK" button or the Menu Select button.
2. Then press the Cursor Right Button or Outer Menu Ring to the right to move the Icon to the next adjustment point.

Note: This adjustment is highly interactive. Therefore it is advised to follow the pattern programmed into the set by pressing the Outer Menu Ring toward the right. However when performing minor touch up adjustments, it is possible to move the Icon up, down, right or left by pressing the Outer Menu Ring in that direction, until the Icon is positioned in the area requiring adjustment.

1. Follow the pattern and make corrections until the Convergence Crosshatch pattern matches the pattern on the screen template.
2. Remove the screen template.

8.11.3 Red Convergence

Red Convergence

1. Select "Red to Green" in the Convergence Selection menu.
2. Adjust the Red crosshatch pattern onto the green pattern in the same manner that the Green was adjusted to the template.

8.11.4 Blue Convergence

Blue Convergence

Select "Blue to Green" in the Convergence Selection menu. Adjust the Blue crosshatch pattern onto the green pattern in the same manner that the Red was adjusted to the Green.

8.11.5 Focus/White balance

Focus/White Balance

1. Set the Picture, Sharpness, Brightness and Tint (NTSC) to their midrange position.
2. Set Color to minimum.

8.11.6 Electrical Focus

Electrical Focus

1. Connect a crosshatch pattern to the antenna input.
2. Cover the screen with a dark cloth.
3. Cover two of the CRT's Output Lenses with an 18-cm x 18-cm piece of cardboard.
4. Observe the magnified reflections of the individual picture tubes on the backside of the viewing screen.
5. Adjust the respective Focus control (top row of the HV/Focus distribution block) for optimum mid-screen focus.
6. Confirm the correct focus by viewing the screen from the front of the unit.
7. Repeat steps 2 through 6 to focus the remaining two CRT's.

8.11.7 Mechanical Focus

Mechanical Focus

1. As with Electrical Focus, connect a crosshatch pattern to the antenna input.
2. Cover the screen with a dark cloth.

3. Cover two of the CRT's Output Lenses with an 18-cm x 18-cm piece of cardboard.
4. Carefully loosen the lens retaining wing nuts on the CRT output lens.
5. Move the Wing nut post in the slot to obtain optimum focus while viewing the screen from the rear of the set.

6. Tighten the wing nut.
7. Confirm correct focus by viewing the screen from the front of the unit.
8. Repeat steps 2 through 7 for the two remaining Output Lenses.

9. Circuit description

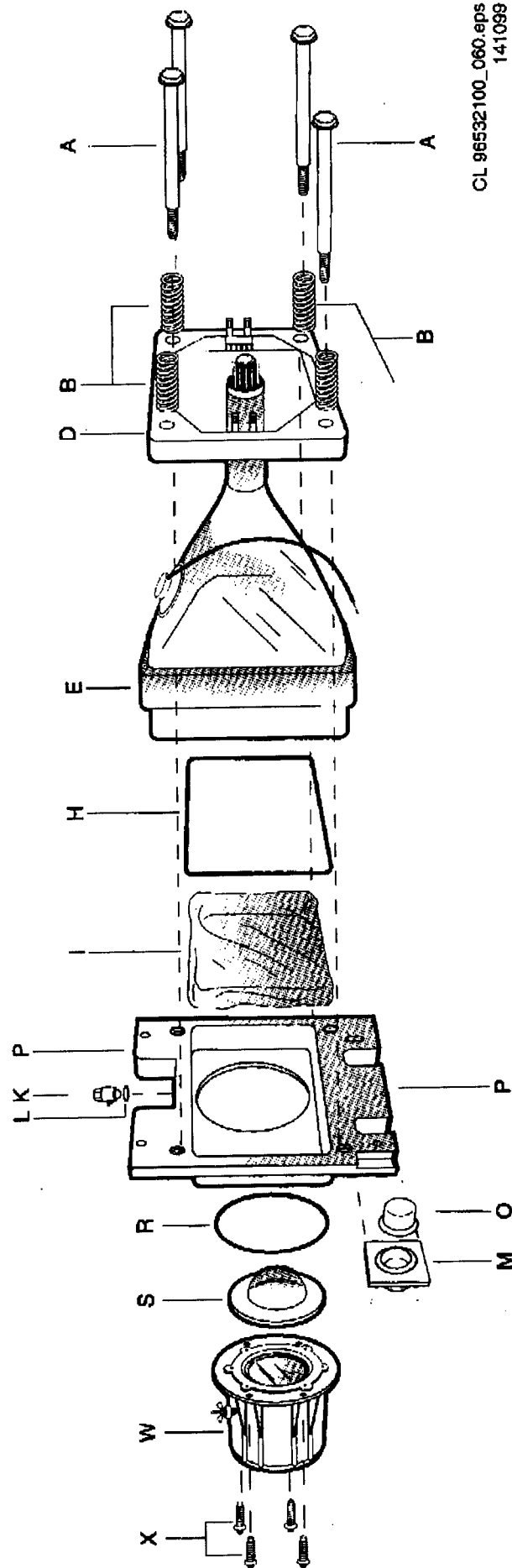
For the circuit description see Training Manual MG5.1E (3122 785 10053)

9.1 List of abbreviations

uC	Micro Computer	INT-L	Internal audio L
2CS	Two Carrier System stereo	INT-R	Internal audio R
2fcs	2 x colour subcarrier frequency	L-in	Left audio in
3,58	Colour subcarrier frequency (3.58 MHz)	L-out	Left audio out
4,43	Colour subcarrier frequency (4.43 MHz)	LED	Light Emitting Diode
AF	Sound IF signal from sound IF detector	Line drive	Line drive
AFC	Automatic Frequency Control	Line prot	Line protection signal
AFT	Automatic Fine Tuning	LOT	Line Output Transformer
AGC	Automatic Gain Control	LSP	Large Signal Panel
Aquadag	Earth from the CRT-tube	MHz	Mega Hertz
Audio/CVBS	Sound IF signal (Intercarrier sound)	MPX	Multiplexed BTSC signal
AV	Audio/Video	NICAM	Near Instantaneous Companding Audio Multiplex
AVS	Automatic Voltage Switching	NIL	Non Interlace
BCI	Beam Current Info	NILS	Non Interlace Signal
BG/I/DK/MN	IF Sound systems BG/I/DK/MN	NTSC	National Television System Committee
BL	Beam Current limitation	OSD	On Screen Display (in diagrams Display On Screen)
BS	Broadcasting satellite	PAL	Phase Alternating Line
BTSC	Broadcast Television System Committee (L-R and L+R)	PIP	Picture In Picture
C	Chrominance	PLL	Phase Locked Loop
C-out	Chroma out	POR	Power On Reset
CRT	Picture Tube	PP	Personal Preference
CTI	Colour Transient Improvement	Prot	Protection signal
CVBS	Colour Video Blanking Sync	PTC	Positive Temperature Coefficient (increasing resistance at increasing temperature)
CVBS-PIP	CVBS for PIP panel	PWM	Pulse Width Modulation
CVBS-Y	CVBS for luminance signal	QPSK	Quadrature Phase Shift Keying
DAC	Digital Analogue Converter	R-in	Right audio in
DC	Direct Current	R-out	Right audio out
East/west	East/west Correction signal	RAM	Random Access Memory
EEPROM	Electrical Erasable and Programmable Read Only Memory	RC5	Remote Control 5 system
EHT	Extra High Tension (25kV)	REF	Reference
EN	Enable	RGB	Red Green Blue
EXT	External inputs (audio and video cinches)	ROM	Read Only Memory
FB	Fast blanking	SAP	Second Audio Program
Flyback	Flyback signal	SAP_AVAIL	Status signal; pulled "low" by BTSC panel, SAP is available
FM	Frequency Modulation	SAW	Surface Acoustic Wave
Frame drive	Frame drive	SC	Sand Castle signal
Geometry	Geometry signal for 60Hz frame	SCL	Clock of the I2C-bus
H-shift	Horizontal-shift	SDA	Data if the I2C-bus
Heater	Heater current for filament	SDM	Service Default Mode
HOR	Horizontal	SECAM	Sequential Couleur a Memoire
HUE	Tint adjustment for NTSC system	Sif	Sound IF signal front end tuner
I/O-expander	Input/Output expander	SM	Service Mode
I-deg	Degaussing current	SMPS	Switched Mode Power Supply (frequency and duty cycle controlled)
I2C	Inter IC data bus	SQ	Squeeze mode
IDENT	Identification signal from synchronisation IC	SSP	Small Signal Panel
IF	Intermediate Frequency	Std-by	Stand by
Int-CVBS	Internal CVBS signal	SVHS	Super Video Home System
		SYNC	Synchronisation
		TINT	PWM control signal for hue control
		TP1	Test Point 1
		TRANS_ID	Status signal
		TXT	Teletext
		U	R-Y

V	B-Y	4:3	Aspect Ratio of Picture Tube (4 equals height, 3 equals width)
VERT	Vertical		
Vfb	Vertical feedback voltage	16:9	Aspect Ratio of Picture Tube (16 equals height, 9 equals width)
VG1	VG1 Voltage	14:9	Aspect Ratio of Picture Tube (14 equals height, 9 equals width)
VG2	VG2 Voltage		
Vref	V-Reference		
Y	Luminance part of the video signal		

9.2 Optical assembly replacement



CL 96532100_060.eps
141099

Figure 9-1

For optical assembly replacement parts see Spare parts list at the end of this manual.

10. Spare parts list

Power Supply Panel

Various

0103	3135 011 02331	Clip for transistor
0104	3135 010 02911	Insulator
0104	3135 011 02331	Clip for transistor
0301	3135 010 02911	Insulator
0301	3135 011 01511	Spring
0320	3135 014 09181	Support
0600	3135 011 02331	Clip for transistor
1000	4822 253 30474	Fuse 5A
1004	2422 093 00027	Fuse 1A
1202	2422 025 16081	11P board
1203	2422 025 15914	4P board
1205	4822 265 11507	4P
1210	2422 025 15516	9P board
1212	4822 267 10889	6P male
1220	4822 267 10966	2P
1221	4822 267 10966	2P
1222	4822 267 10966	2P
1223	4822 267 10973	1P
1224	4822 267 10973	1P
1225	4822 267 10973	1P
1276	4822 265 11518	10P male v
1300	2422 093 00031	Fuse 2A
1301	2422 086 10786	Fuse 4A
1302	2422 086 10786	Fuse 4A
1305	2422 132 07314	Relay

-II-

2000	4822 121 43819	0.68μF 10% 250V
2001	4822 121 43819	0.68μF 10% 250V
2002	2020 554 90173	2.2nF 20% 250V
2003	2020 554 90173	2.2nF 20% 250V
2004	4822 252 60151	Surge prot. DSP-501N-A21F
2005	4822 121 10512	275V 220nF 20%
2006	2020 558 90557	1nF 10% 1KV
2007	2020 558 90557	1nF 10% 1KV
2008	2020 558 90557	1nF 10% 1KV
2009	2020 558 90557	1nF 10% 1KV
2104	4822 121 10512	275V 220nF 20%
2105	4822 122 50116	470pF 10% 1KV
2107	4822 126 11382	1nF 10% 1KV
2108	4822 126 11382	1nF 10% 1KV
2109	4822 122 50116	470pF 10% 1KV
2110	2020 021 91323	470μF 20% 400V
2111	2222 479 90014	220nF 5% 250V
2112	4822 121 42868	220nF 5% 50V
2113	4822 124 40255	100μF 20% 63V
2114	4822 121 42729	1.5nF 1% 250V
2115	2020 308 90121	330pF 5% 50V
2116	4822 121 70654	2.2nF 10% 50V
2117	5322 124 41381	22μF 20% 50V
2118	4822 124 21913	1μF 20% 63V
2119	4822 121 10711	100nF 20% 275V
2119	4835 121 47646	220pF 5% 50V
2120	4822 126 13337	220pF 10% 1KV
2203	2020 554 90173	2.2nF 20% 250V
2206	4822 124 80144	220μF 20% 25V
2208	4822 122 31211	100pF 10% 500V
2209	4822 124 40207	100μF 20% 25V
2213	4822 124 81144	100μF 16V
2214	4822 124 11508	22μF 20% 250V
2215	4822 124 11508	22μF 20% 250V
2226	4822 122 30103	22nF 80% 63V
2228	4822 122 31211	100pF 10% 500V
2269	4822 122 31211	100pF 10% 500V
2270	4822 124 40207	100μF 20% 25V
2282	4822 124 22651	1.0μF 20% 50V
2283	4822 124 40433	47μF 20% 25V
2284	4822 122 30043	10nF 80% 63V
2285	4822 122 30043	10nF 80% 63V
2300	2020 021 91323	470μF 20% 400V
2301	4822 126 11382	1nF 10% 1KV
2302	4822 122 50116	470pF 10% 1KV
2303	4822 124 40207	100μF 20% 25V
2304	2020 558 90554	330pF 10% 1KV
2305	5322 122 32311	470pF 10% 100V
2306	4822 124 21913	1μF 20% 63V
2307	5322 122 32261	4.7nF 10% 100V
2308	5322 122 32261	4.7nF 10% 100V
2309	4822 122 31237	82pF 2% 100V
2310	4822 126 13461	680pF 10% 50V

2311	5322 122 32331	1nF 10% 100V
2312	4822 122 50116	470pF 10% 1KV
2313	2020 021 91321	470μF 20% 200V
2314	4822 124 11508	22μF 20% 250V
2315	4822 122 50116	470pF 10% 1KV
2316	3198 026 51020	1000μF 20% 50V
2317	3198 026 51020	1000μF 20% 50V
2318	5322 121 42386	100nF 5% 63V
2319	4822 122 50116	470pF 10% 1KV
2320	3198 026 51020	1000μF 20% 50V
2321	3198 026 51020	1000μF 20% 50V
2322	5322 121 42386	100nF 5% 63V
2323	4822 122 50116	470pF 10% 1KV
2324	2020 021 91374	22000μF 20% 25V
2325	5322 121 42386	100nF 5% 63V
2326	5322 121 42386	100nF 5% 63V
2327	2020 021 91376	470μF 20% 35V
2328	4822 124 21913	1μF 20% 63V
2329	4822 122 50116	470pF 10% 1KV
2330	2020 021 91376	470μF 20% 35V
2331	5322 121 42386	100nF 5% 63V
2332	5322 121 42386	100nF 5% 63V
2333	5322 122 32818	2.2nF 10% 100V
2334	5322 121 42489	33nF 5% 250V
2335	4822 124 81151	22μF 50V
2336	5322 121 42386	100nF 5% 63V
2337	4822 124 81151	22μF 50V
2338	4822 124 80061	1000μF 20% 25V
2339	5322 121 42386	100nF 5% 63V
2340	4822 122 30043	10nF 80% 63V
2341	5322 121 42386	100nF 5% 63V
2342	5322 122 32311	470pF 10% 100V
2343	5322 122 32331	1nF 10% 100V
2344	4822 124 80061	1000μF 20% 25V
2345	4822 122 30043	10nF 80% 63V
2346	5322 121 42386	100nF 5% 63V
2347	4822 124 21913	1μF 20% 63V
2348	4822 124 21913	1μF 20% 63V
2349	4822 122 30043	10nF 80% 63V
2350	4822 122 50116	470pF 10% 1KV
2351	4822 122 30103	22nF 80% 63V
2352	4822 124 80061	1000μF 20% 25V
2353	5322 122 32334	220pF 10% 100V
2354	4822 124 40433	47μF 20% 25V
2355	5322 122 32311	470pF 10% 100V
2356	2020 021 91376	470μF 20% 35V



3000	4822 053 21475	4M7 5% 0.5W
3001	4822 053 21475	4M7 5% 0.5W
3003	4822 117 12181	470Ω 20% 0.5W
3004	4822 053 20335	3M3 5% 0.25W
3005	4822 053 20335	3M3 5% 0.25W
3006	4822 116 52285	470k 5% 0.5W
3007	4822 116 83961	6k8 5%
3008	4822 050 21003	10k 1% 0.6W
3009	2322 253 41228	2.2Ω 5% 10W
3011	4822 116 21217	VDR 1mA/423V 800V
3105	2120 106 90522	6.8Ω 5% 2W
3107	4822 053 10689	68Ω 5% 1W
3108	4822 053 21335	3M3 5% 0.5W
3109	4822 116 83884	47k 5% 0.5W
3110	4822 116 83882	39k 5% 0.5W
3111	4822 117 10118	1M 5% 0.5W
3112	4822 053 21225	2M2 5% 0.5W
3113	4822 116 52245	150k 5% 0.5W
3114	4822 116 52195	47Ω 5% 0.5W
3115	4822 116 52195	47Ω 5% 0.5W
3116	4822 050 26803	68k 1% 0.6W
3117	4822 050 21003	10k 1% 0.6W
3118	4822 116 83881	390Ω 5% 0.5W
3119	4822 053 21335	3M3 5% 0.5W
3120	4822 116 52289	5k6 5% 0.5W
3121	4822 116 52264	27k 5% 0.5W
3123	4822 116 52249	1k8 5% 0.5W
3124	4822 116 52272	330k 5% 0.5W
3125	4822 050 11002	1k 1% 0.4W
3126	4822 116 83884	47k 5% 0.5W
3127	4822 116 52251	18k 5% 0.5W
3128	4822 116 52249	1k8 5% 0.5W
3130	2120 106 90565	0.1Ω 5% 2W
3131	2120 106 90565	0.1Ω 5% 2W
3132	2120 106 90565	0.1Ω 5% 2W
3133	2120 106 90565	0.1Ω 5% 2W
3134	4822 053 21474	470k 5% 0.5W

3212	4822 050 21003	10k 1% 0.6W
3213	4822 050 21003	10k 1% 0.6W
3214	4822 116 52234	100k 5% 0.5W
3215	4822 050 11002	1k 1% 0.4W
3216	4822 052 10109	10Ω 5% 0.33W
3223	4822 116 52195	47Ω 5% 0.5W
3239	4822 050 22402	2k4 1% 0.6W
3241	4822 116 83961	6k8 5%
3244	4822 050 23303	33k 1% 0.6W
3246	4822 050 22402	2k4 1% 0.6W
3247	4822 116 52213	180Ω 5% 0.5W
3287	4822 116 83883	470Ω 5% 0.5W
3288	4822 050 21003	10k 1% 0.6W
3289	4822 050 21003	10k 1% 0.6W
3300	4822 117 12076	22k 5% 5W
3301	2322 257 41102	1k 5% 5W
3302	2322 257 41102	1k 5% 5W
3303	4822 116 52234	100k 5% 0.5W
3304	4822 050 11002	1k 1% 0.4W
3305	4822 050 21003	10k 1% 0.6W
3306	4822 116 52176	10Ω 5% 0.5W
3307	4822 116 52191	33Ω 5% 0.5W
3308	3198 012 21070	0.1Ω 5% 2W
3309	3198 012 14770	0.47Ω 5% 1W
3310	4822 116 83883	470Ω 5% 0.5W
3311	4822 050 24708	4.7Ω 1% 0.6W
3312	4822 116 52201	75Ω 5% 0.5W
3313	4822 050 21003	10k 1% 0.6W
3314	4822 116 52304	82k 5% 0.5W
3315	4822 116 52244	15k 5% 0.5W
3316	4822 050 11002	1k 1% 0.4W
3317	4822 116 52244	15k 5% 0.5W
3318	4822 116 52245	150k 5% 0.5W
3319	4822 116 52244	15k 5% 0.5W
3322	4822 101 11383	470Ω 30% LIN
3323	2120 105 93474	2.7k 5% 1W
3324	3198 012 11040	100k 5% 1W
3325	4822 050 21003	10k 1% 0.6W
3326	4822 116 52283	4k7 5% 0.5W
3327	4822 116 52175	100Ω 5% 0.5W
3328	4822 116 52175	100Ω 5% 0.5W
3329	4822 116 52219	330Ω 5% 0.5W
3330	4822 053 10223	22k 5% 1W
3331	4822 053 10223	22k 5% 1W
3332	4822 052 10108	1Ω 5% 0.33W
3333	3198 012 21070	0.1Ω 5% 2W
3334	4822 050 11002	1k 1% 0.4W
3335	4822 116 52234	100k 5% 0.5W
3336	4822 116 52175	100Ω 5% 0.5W
3337	4822 116 83881	390Ω 5% 0.5W
3338	4822 050 21003	10k 1% 0.6W
3339	4822 116 52269	3k3 5% 0.5W
3340	4822 116 83874	220k 5% 0.5W
3341	3198 012 23390	0.33Ω 5% 2W
3342	3198 012 23390	0.33Ω 5% 2W
3343	4822 050 21003	10k 1% 0.6W
3344	4822 050 21003	10k 1% 0.6W
3345	2322 251 41471	470Ω 5% 5W
3346	2322 251 41471	470Ω 5% 5W
3347	4822 116 52283	4k7 5% 0.5W
3350	3198 012 14730	47k 5% 1W

5000	3121 218 61371	Transformer
5001	3121 218 61491	Transformer
5211	4822 157 50964	100μH
5214	4822 157 50964	100μH
5233	4822 157 11411	Bead 100MHz
5234	4822 157 71736	10μH 5%
5235	4822 157 71736	10μH 5%
5301	4822 157 11411	Bead 100MHz
5302	4822 157 11411	Bead 100MHz
5303	4822 157 11411	Bead 100MHz
5304	4822 157 11411	Bead 100MHz
5305	4822 157 71736	10μH 5%
5306	4822 157 11411	Bead 100MHz
5307	4822 157 71736	10μH 5%
5308	4822 157 11411	Bead 100MHz
5309	4822 157 71736	10μH 5%
5310	4822 157 11411	Bead 100MHz
5311	4822 157 71736	10μH 5%
5312	4822 157 71736	10μH 5%
5313	4822 157 11411	Bead 100MHz
5314	4822 157 71736	10μH 5%
5315	4822 157 71736	10μH 5%

5316 4822 157 71736 10μH 5%
5317 4822 157 71736 10μH 5%



6001 4822 130 83147 DF06M
6103 4835 130 37491 MUR860
6104 4822 130 30842 BAV21
6204 4822 130 42488 BYD33D
6205 4822 209 81397 TL431CLPST
6207 4822 130 42488 BYD33D
6231 4822 130 32245 BYV10-40
6301 4822 130 42606 BYD33J
6302 5322 130 31938 BYV27-200
6303 5322 130 31938 BYV27-200
6304 4822 130 42488 BYD33D
6306 4822 130 10218 BY229X-800
6307 4822 130 10218 BY229X-800
6308 4822 130 10218 BY229X-800
6309 5322 130 31938 BYV27-200
6311 4822 130 42488 BYD33D
6312 4822 130 83865 SB360
6313 4822 130 30621 1N4148
6314 4822 130 32896 BYD33M
6315 4822 130 32896 BYD33M



7000 4822 130 40959 BC547B
7102 4822 209 16121 L4981A
7104 4822 130 10745 STW15NA50
7204 4822 130 44283 BC636
7205 4822 130 40959 BC547B
7206 4822 130 91451 CQY80NG
7211 4822 209 17276 TOP221P
7213 4822 130 91451 CQY80NG
7214 4822 130 40959 BC547B
7300 4822 130 40959 BC547B
7302 4822 209 15684 MC44603AP
7303 4822 130 91451 CQY80NG
7304 4822 209 81397 TL431CLPST
7305 4822 209 11079 MC79M05CT
7306 4822 209 90281 L78M08CP
7307 4822 209 60059 NJM2360D
7309 4822 130 40959 BC547B

High Voltage Scan Module

Various

3135 011 02331 Clip for transistor
3135 011 02621 Spring
1501 2422 025 16153 4P
1502 2422 025 16153 4P
1503 2422 025 16153 4P
1504 2422 025 14409 3P
1505 4822 265 11507 4P
1506 4822 267 10973 1P
1507 4822 267 10888 5P male
1508 4822 267 31673 3P male v 2.5
1509 2422 025 15516 9P
1511 4822 267 10933 7P male
1512 4822 267 10889 6P male
1582 4822 265 11507 4P
1590 3121 218 60362 EHT res/cap
1800 4822 071 51002 Fuse 1A
1801 4822 071 51002 Fuse 1A
LEAD 3135 010 01351 Highvoltage cable



2452 2020 012 92648 2.2μF 20% 50V
2501 4822 121 51252 470nF 5% 63V
2503 5322 122 32052 680pF 10% 100V
2511 5322 121 42386 100nF 5% 63V
2557 4822 124 40255 100μF 20% 63V
2558 2222 347 90235 68nF 10% 100V
2559 5322 121 42386 100nF 5% 63V
2564 5322 126 10511 1nF 5% 50V
2565 5322 121 42386 100nF 5% 63V
2567 5322 122 32268 470pF 10% 50V
2570 5322 122 32268 470pF 10% 50V
2571 5322 126 10511 1nF 5% 50V
2573 5322 122 32311 470pF 10% 100V
2574 5322 121 42498 680nF 5% 63V
2586 5322 121 42386 100nF 5% 63V
2608 4822 126 13185 680pF 10% 500V

2800 4822 124 21913 1μF 20% 63V
2801 5322 121 42386 100nF 5% 63V
2804 4822 124 40248 10μF 20% 63V
2805 4822 121 51473 470nF 20% 63V
2806 4822 122 31175 1nF 10% 500V
2807 4822 126 13838 100nF 50V 20%
2808 5322 122 31863 330pF 5% 63V
2809 4822 121 51473 470nF 20% 63V
2810 2020 024 90586 330μF 20% 200V
2811 4822 126 13864 330pF 10% 2KV
2814 2020 024 90587 68μF 20% 400V
2815 4822 122 31175 1nF 10% 500V
2817 2222 375 90141 3.3nF 5% 1.6KV
2818 4822 126 11503 820pF 10% 2KV
2819 4822 121 10551 27nF 5% 630V
2820 4822 121 42035 4.7μF 10% 100V
2822 2222 479 90022 430nF 5% 250V
2824 2020 558 90555 470pF 10% 1KV
2825 2020 558 90555 470pF 10% 1KV
2826 4822 124 81144 1000μF 16V
2827 4822 124 81144 1000μF 16V
2836 2020 558 90557 1nF 10% 1KV
2837 4822 124 40248 10μF 20% 63V
2838 2020 558 90557 1nF 10% 1KV
2839 2022 333 00119 10nF 5% 1.6KV
2850 2020 558 90555 470pF 10% 1KV
2851 4822 124 40255 100μF 20% 63V
2898 2020 021 91429 1500μF 20% 35V
2899 5322 121 44356 4.7nF 5% 2KV
2900 4822 124 80144 220μF 20% 25V
2901 5322 122 31865 1.5nF 10% 63V
2902 5322 122 31647 1nF 10% 63V
2903 4822 124 21913 1μF 20% 63V
2904 4822 122 33177 10nF 20% 50V
2905 4822 126 14585 100nF 10% 50V
2906 4822 122 33177 10nF 20% 50V
2907 4822 121 51305 15nF 10% 50V
2908 4822 126 13486 15pF 2% 63V
2910 4822 121 51473 470nF 20% 63V
2911 4822 124 40769 4.7μF 20% 100V
2912 4822 124 40248 10μF 20% 63V
2913 4822 124 81144 1000μF 16V
2914 2020 024 90586 330μF 20% 200V
2915 2222 375 90143 3.9nF 5% 1.6KV
2916 4822 121 70642 6.8nF 1600V
2917 4822 121 51473 470nF 20% 63V
2918 4822 124 22652 2.2μF 20% 50V
2919 5322 121 42386 100nF 5% 63V
2920 4822 124 40769 4.7μF 20% 100V
2921 4822 124 80144 220μF 20% 25V
2922 4822 124 11767 470μF 20% 25V
2923 5322 122 31647 1nF 10% 63V
2924 4822 126 11503 820pF 10% 2KV
2926 4822 124 40248 10μF 20% 63V
2927 4822 124 21913 1μF 20% 63V
2928 4822 121 70619 22nF 10% 50V
2929 4822 126 13597 330pF 10% 500V
2930 4822 122 31173 220pF 10% 500V
2932 4822 126 13838 100nF 20% 50V
2933 4822 126 13597 330pF 10% 500V



3452 4822 051 20478 4Ω 5% 0.1W
3453 4822 051 20478 4Ω 5% 0.1W
3454 4822 051 20478 4Ω 5% 0.1W
3455 4822 051 20478 4Ω 5% 0.1W
3456 4822 051 20471 470Ω 5% 0.1W
3457 4822 117 11449 2k2 1% 0.1W
3458 4822 117 11449 2k2 1% 0.1W
3500 4822 116 52283 4k7 5% 0.5W
3501 4822 050 21003 10k 1% 0.6W
3503 4822 051 20124 120k 5% 0.1W
3504 4822 051 20124 120k 5% 0.1W
3505 4822 116 83872 220Ω 5% 0.5W
3506 4822 051 20124 120k 5% 0.1W
3507 4822 116 52269 3k3 5% 0.5W
3508 4822 116 52276 3k9 5% 0.5W
3510 4822 116 52285 470k 5% 0.5W
3511 4822 116 83884 47k 5% 0.5W
3512 4822 050 21003 10k 1% 0.6W
3513 4822 116 83882 39k 5% 0.5W
3514 4822 050 21003 10k 1% 0.6W
3550 2120 108 92618 1k8 1% 0805
3551 2120 108 92618 1k8 1% 0805
3558 4822 116 52175 100Ω 5% 0.5W
3562 4822 053 10478 4Ω 5% 1W
3563 4822 053 10221 220Ω 5% 1W
3565 4822 053 10221 220Ω 5% 1W
3571 4822 117 11383 12k 1% 0.1W

3572 4822 116 52175 100Ω 5% 0.5W
3573 4822 116 52175 100Ω 5% 0.5W
3581 4822 117 11449 2k2 1% 0.1W
3584 4822 117 13628 1Ω 5% 3W
3585 4822 050 21003 10k 1% 0.6W
3590 4822 051 20393 39k 5% 0.1W
3591 4822 117 11449 2k2 1% 0.1W
3592 4822 117 13577 330Ω 1% 1.25W 0805
3593 4822 051 10102 1k 2% 0.25W
3594 4822 116 52175 100Ω 5% 0.5W
3595 4822 050 23303 33k 1% 0.6W
3800 2120 105 90222 1k5 1% 1W
3801 4822 116 52264 27k 5% 0.5W
3802 4822 050 26803 68k 1% 0.6W
3803 4822 052 10101 100Ω 5% 0.33W
3805 4822 053 10101 100Ω 5% 1W
3806 4822 053 10102 1k 5% 1W
3807 4822 116 52219 330Ω 5% 0.5W
3808 3198 012 14720 4.7k 5% 1W
3809 4822 116 52219 330Ω 5% 0.5W
3810 4822 117 12473 4k7 5% 5W
3811 4822 117 12473 4k7 5% 5W
3812 4822 116 52245 150k 5% 0.5W
3813 2120 106 90504 1Ω 5% 2W
3814 4822 051 20339 33Ω 5% 0.1W
3815 4822 116 81832 0.27Ω 5% 0.5W
3816 4822 050 26803 68k 1% 0.6W
3817 4822 116 83883 470Ω 5% 0.5W
3821 4822 053 10471 470Ω 5% 1W
3822 4822 053 10221 220Ω 5% 1W
3823 4822 050 26803 68k 1% 0.6W
3824 4822 053 10221 220Ω 5% 1W
3825 4822 050 26803 68k 1% 0.6W
3826 4822 053 10221 220Ω 5% 1W
3828 4822 050 26803 68k 1% 0.6W
3829 4822 116 52182 15Ω 5% 0.5W
3830 4822 053 10471 470Ω 5% 1W
3831 4822 051 20683 68k 5% 0.1W
3832 4822 051 20332 3k3 5% 0.1W
3833 4822 051 20101 100Ω 5% 0.1W
3834 4822 052 10108 1Ω 5% 0.33W
3835 4822 117 12955 2k7 1% 0.1W 0805
3836 4822 116 83876 270Ω 5% 0.5W
3837 4822 116 52238 12k 5% 0.5W
3838 4822 116 52249 1k8 5% 0.5W
3839 2322 195 63304 300k 5% 3W
3840 4822 117 10118 1M 5% 0.5W
3841 3198 012 14720 4.7k 5% 1W
3865 2120 106 90282 0.47Ω 5% 1W
3866 4822 116 52251 18k 5% 0.5W
3867 4822 052 10108 1Ω 5% 0.33W
3890 4822 051 20101 100Ω 5% 0.1W
3900 4822 053 10221 220Ω 5% 1W
3901 4822 100 12157 10k 30%
3902 4822 116 52238 12k 5% 0.5W
3904 4822 050 11002 1k 1% 0.4W
3905 4822 051 20124 120k 5% 0.1W
3906 4822 116 52243 1k5 5% 0.5W
3907 4822 116 52289 5k6 5% 0.5W
3908 4822 116 52243 1k5 5% 0.5W
3909 4822 116 52213 180Ω 5% 0.5W
3910 4822 050 21003 10k 1% 0.6W
3911 4822 116 52182 15Ω 5% 0.5W
3912 4822 050 21003 10k 1% 0.6W
3913 4822 116 52283 4k7 5% 0.5W
3914 4822 117 10833 10k 1% 0.1W
3915 4822 116 52231 820Ω 5% 0.5W
3916 4822 051 10102 1k 2% 0.25W
3917 4822 117 11635 1k 10% 0.5W
3918 4822 116 52244 15k 5% 0.5W
3919 4822 116 52243 1k5 5% 0.5W
3920 4822 050 11002 1k 1% 0.4W
3921 4822 116 52251 18k 5% 0.5W
3922 4822 116 52243 1k5 5% 0.5W
3923 3198 012 16820 6.8k 5% 1W
3924 4822 116 52213 180Ω 5% 0.5W
3926 4822 116 52175 100Ω 5% 0.5W
3927 4822 050 21003 10k 1% 0.6W
3928 4822 116 52249 1k8 5% 0.5W
3932 4822 116 52289 5k6 5% 0.5W
3933 4822 051 20105 1M 5% 0.1W
3934 4822 116 81832 0.27Ω 5% 0.5W
3935 4822 116 52219 330Ω 5% 0.5W
3938 2122 254 00476 30Ω 10% 15W
3939 4822 116 52256 2k2 5% 0.5W
3940 4822 050 21503 15k 1% 0.6W
3941 4822 116 52291 56k 5% 0.5W
3942 4822 116 52234 100k 5% 0.5W
3943 4822 100 12155 2k2 30%
3944 4822 116 52206 120Ω 5% 0.5W
3945 4822 051 20684 680k 5% 0.1W

3946	4822 116 83933	15k 1% 0.1W
3948	4822 050 11002	1k 1% 0.4W
3949	4822 116 52226	560Ω 5% 0.5W
3950	2322 251 41339	33Ω 5% 5W
3951	4822 117 10833	10k 1% 0.1W
3952	4822 116 52176	10Ω 5% 0.5W
3954	4822 116 83882	39k 5% 0.5W
3955	4822 053 10333	33k 5% 1W
3957	4822 116 52243	1k5 5% 0.5W
3959	4822 050 11002	1k 1% 0.4W
3960	4822 052 10101	100Ω 5% 0.33W
3961	4822 053 10689	68Ω 5% 1W
3962	4822 116 52175	100Ω 5% 0.5W
3963	4822 116 52219	330Ω 5% 0.5W
3964	4822 116 52176	10Ω 5% 0.5W
3965	4822 116 83866	1M 5% 0.5W
3967	4822 051 20471	470Ω 5% 0.1W
3968	4822 116 52257	22k 5% 0.5W
3969	4822 116 83884	47k 5% 0.5W
3971	4822 116 52234	100k 5% 0.5W
3973	4822 116 52304	82k 5% 0.5W
3975	4822 052 10101	100Ω 5% 0.33W
3980	4822 117 12473	4k7 5% 5W
3981	4822 051 20683	68k 5% 0.1W
3982	4822 051 20683	68k 5% 0.1W
3983	4822 116 52228	680Ω 5% 0.5W
3989	4822 116 52228	680Ω 5% 0.5W
3990	4822 116 52249	1k8 5% 0.5W
3991	4822 050 11002	1k 1% 0.4W
3993	4822 116 52206	120Ω 5% 0.5W
3994	4822 116 83884	47k 5% 0.5W
3995	4822 050 11203	12k 1% 0.4W
3996	4822 050 11002	1k 1% 0.4W
3997	4822 050 11002	1k 1% 0.4W
3998	4822 116 52182	15Ω 5% 0.5W
3999	4822 051 20154	150k 5% 0.1W
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5800	3121 218 31331	Hor. driver transf.
5801	2422 531 02386	Switchmode transf.
5802	2422 549 43513	Switchmode transf.
5803	2422 535 94987	Bridge coil 97μH
5804	2422 535 94991	Linearity corr.
5805	4822 526 10704	Bead 100MHz
5806	4822 157 11086	47μH 10%
5900	3122 138 38641	L.O.T. CML17
5901	3121 218 31201	Hor. signal driver transf.
5902	2422 535 94603	22μH 10%
5903	4822 157 11086	47μH 10%
5904	4822 157 11411	Bead 100MHz
5910	4822 157 71387	Bead 100MHz

6500	4822 130 10794	BZX284-C10
6501	4822 130 83757	BAS216
6502	4822 130 83757	BAS216
6503	4822 130 83757	BAS216
6504	4822 130 42488	BYD33D
6505	4822 130 83757	BAS216
6550	5322 130 31938	BYV27-200
6552	4822 130 34278	BZX79-B6V8
6801	4822 130 42606	BYD33J
6802	5322 130 31938	BYV27-200
6803	5322 130 31938	BYV27-200
6806	3135 011 01511	Spring, clip
6806	4822 130 83812	BY459-1500
6808	3135 011 01511	Spring, clip
6808	9319 001 63671	DD50R
6809	4822 130 83757	BAS216
6810	4822 130 83757	BAS216
6830	4822 130 32896	BYD33M
6850	4822 130 42606	BYD33J
6900	4822 130 30621	1N4148
6901	4822 130 42488	BYD33D
6902	4835 130 37115	BY328
6904	4822 130 34121	BAX18
6906	4822 130 42488	BYD33D
6907	4822 130 34121	BAX18
6909	4822 130 30842	BAV21
6910	4822 130 41602	BYW95C
6915	4822 130 42488	BYD33D
6917	4822 130 34278	BZX79-B6V8
6918	9338 873 00673	BZX55-F27
6919	9338 872 20673	BZX55-F12
6950	4822 130 34278	BZX79-B6V8
6951	4822 130 83757	BAS216



7501	5322 130 60845	BC807-25
7502	4822 130 42804	BC817-25
7503	4822 130 42804	BC817-25
7550	4822 209 15255	TDA4861/V3
7551	5322 130 60159	BC846B
7552	4822 130 41589	2SC1473NCO
7553	5322 130 60159	BC846B
7590	5322 130 60159	BC846B
7800	5322 130 60159	BC846B
7801	4822 130 42159	BF819
7802	4822 130 63817	BU2520AF
7803	4822 130 44568	BC557B
7804	4822 130 42804	BC817-25
7830	4835 130 47893	2SC3675
7900	4822 209 72804	MC1391P
7901	4822 209 81397	TL431CLPST
7902	4835 209 87838	SC78130P1
7903	4822 130 44568	BC557B
7904	4822 130 60373	BC856B
7905	4822 130 42804	BC817-25
7906	4822 130 63817	BU2520AF
7907	4822 130 40959	BC547B
7908	4822 130 44568	BC557B
7909	4822 130 60373	BC856B
7952	4822 130 60578	2SC2482
7953	5322 130 60845	BC807-25

Mains Switch Panel

Various

1000	4822 267 10966	2P
1001	4822 276 14024	Mains switch 2P 4/128A
1002	4822 267 10966	2P
BKT1	3135 011 01367	Bracket for mains switch

Digital Convergence Panel

Various

1033	2422 025 02496	2P
1034	2422 038 00173	Board connector
1035	4822 267 10888	5P male
1045	4822 267 10888	5P male
1053	2422 025 05897	Board connector
BKT30		
0	3135 021 02481	Bracket
BKT30		
1	3135 021 02481	Bracket
F300	4822 071 51002	Fuse 1A
F301	2422 086 10786	Fuse 4A
F302	2422 086 10786	Fuse 4A
F303	4822 071 51002	Fuse 1A
F304	4822 071 51002	Fuse 1A
P300	3135 011 03221	IC clip
P301	3135 011 03221	IC clip



C100	4822 126 14585	100nF 10% 50V
C101	4822 126 14585	100nF 10% 50V
C102	4822 126 14585	100nF 10% 50V
C103	4822 122 33575	220pF 5% 63V
C104	4822 122 33575	220pF 5% 63V
C105	5322 122 32335	330pF 10% 100V
C107	4822 126 14585	100nF 10% 50V
C108	4822 126 14585	100nF 10% 50V
C109	4822 126 14585	100nF 10% 50V
C110	5322 122 31647	1nF 10% 63V
C111	4822 122 33177	10nF 20% 50V
C112	4822 126 14585	100nF 10% 50V
C113	4822 126 14585	100nF 10% 50V
C114	5322 122 32531	100pF 5% 50V
C115	4822 126 14585	100nF 10% 50V
C116	5322 122 32531	100pF 5% 50V
C117	4822 126 14585	100nF 10% 50V
C118	4822 126 14585	100nF 10% 50V
C119	5322 122 32531	100pF 5% 50V
C120	5322 122 32531	100pF 5% 50V
C121	5322 122 32531	100pF 5% 50V
C122	5322 122 32531	100pF 5% 50V
C126	4822 124 22652	2.2μF 20% 50V
C127	4822 124 22652	2.2μF 20% 50V
C128	5322 122 32448	10pF 5% 63V
C129	4822 124 41584	100μF 20% 10V
C130	4822 124 40248	10μF 20% 63V
C132	4822 126 14585	100nF 10% 50V
C200	4822 124 21913	1μF 20% 63V
C201	4822 126 14585	100nF 10% 50V
C202	4822 126 14043	1μF 20% 16V
C203	5322 122 32268	470pF 10% 50V
C205	4822 124 21913	1μF 20% 63V
C206	4822 126 14043	1μF 20% 16V
C207	4822 126 14585	100nF 10% 50V
C208	5322 122 32268	470pF 10% 50V
C210	4822 124 21913	1μF 20% 63V
C211	4822 126 14043	1μF 20% 16V
C212	4822 126 14585	100nF 10% 50V
C214	5322 122 32268	470pF 10% 50V
C215	5322 122 32268	470pF 10% 50V
C216	5322 122 32268	470pF 10% 50V
C217	5322 122 32268	470pF 10% 50V
C218	5322 122 32531	100pF 5% 50V
C219	5322 122 32531	100pF 5% 50V
C221	4822 126 14585	100nF 10% 50V
C222	5322 122 32531	100pF 5% 50V
C223	5322 122 32531	100pF 5% 50V
C224	4822 126 14585	100nF 10% 50V
C225	4822 126 14585	100nF 10% 50V
C226	5322 122 32531	100pF 5% 50V
C227	5322 122 32531	100pF 5% 50V
C228	4822 126 14585	100nF 10% 50V
C229	5322 122 32531	100pF 5% 50V
C231	5322 122 32531	100pF 5% 50V
C232	5322 122 32531	100pF 5% 50V
C233	5322 122 32531	100pF 5% 50V
C234	4822 126 14585	100nF 10% 50V
C235	4822 126 14585	100nF 10% 50V
C237	5322 122 32531	100pF 5% 50V
C238	5322 122 32531	100pF 5% 50V
C239	4822 124 40207	100μF 20% 25V
C240	4822 124 40207	100μF 20% 25V
C241	4822 124 40207	100μF 20% 25V
C242	4822 124 40207	100μF 20% 25V
C243	4822 124 40207	100μF 20% 25V
C244	4822 124 40207	100μF 20% 25V
C260	4822 126 14585	100nF 10% 50V
C261	4822 126 14585	100nF 10% 50V
C262	4822 126 14585	100nF 10% 50V
C263	4822 126 14585	100nF 10% 50V
C264	4822 126 14585	100nF 10% 50V
C265	4822 126 14585	100nF 10% 50V
C300	4822 126 14585	100nF 10% 50V
C301	4822 124 22651	1.0μF 20% 50V
C302	4822 126 14585	100nF 10% 50V
C303	4822 124 22651	1.0μF 20% 50V
C304	4822 126 14585	100nF 10% 50V
C305	4822 124 22651	1.0μF 20% 50V
C306	4822 126 14585	100nF 10% 50V
C307	4822 124 22651	1.0μF 20% 50V
C308	4822 124 80061	1000μF 20% 25V
C309	4822 124 80061	1000μF 20% 25V
C310	3198 026 51020	1000μF 20% 50V
C311	3198 026 51020	1000μF 20% 50V
C312	4822 124 80061	1000μF 20% 25V
C313	4822 124 80061	1000μF 20% 25V
C314	4822 124 80061	1000μF 20% 25V
C315	4822 124 80061	1000μF 20% 25V
C316	4822 124 40255	100μF 20% 63V
C317	5322 121 42386	100nF 5% 63V
C318	5322 122 33538	150pF 2% 63V
C319	5322 122 33538	150pF 2% 63V
C320	5322 122 33538	150pF 2% 63V
C321	4822 124 40255	100μF 20% 63V
C322	5322 121 42386	100nF 5% 63V
C323	4822 124 22652	2.2μF 20% 50V
C324	5322 122 33538	150pF 2% 63V
C325	5322 122 33538	150pF 2% 63V
C326	5322 122 33538	150pF 2% 63V
C327	4822 124 40255	100μF 20% 63V
C328	5322 121 42386	100nF 5% 63V
C329	4822 124 40255	100μF 20% 63V
C330	5322 121 42386	100nF 5% 63V
C331	4822 124 22652	2.2μF 20% 50V
C332	3198 026 51020	1000μF 20% 50V
C333	3198 026 51020	1000μF 20% 50V
C334	4822 124 41751	47μF 20% 50V



BR2	4822 051 20008	0Ω jumper 0805
R102	4822 117 10833	10k 1% 0.1W
R103	4822 117 11139	1k5 1% 0.1W
R104	4822 051 20101	100Ω 5% 0.1W

R105	4822 117 11503	220Ω 1% 0.1W
R106	4822 117 12955	2k7 1% 0.1W 0805
R107	4822 116 52283	4k7 5% 0.5W
R108	4822 052 10101	100Ω 5% 0.33W
R109	4822 050 11002	1k 1% 0.4W
R110	4822 052 10101	100Ω 5% 0.33W
R111	4822 051 20472	4k7 5% 0.1W
R112	4822 051 20472	4k7 5% 0.1W
R113	4822 117 10833	10k 1% 0.1W
R114	4822 117 10833	10k 1% 0.1W
R115	4822 051 20333	33k 5% 0.1W
R116	4822 116 52269	3k3 5% 0.5W
R117	4822 117 10833	10k 1% 0.1W
R118	4822 116 52256	2k2 5% 0.5W
R119	4822 117 10833	10k 1% 0.1W
R121	4822 116 52175	100Ω 5% 0.5W
R123	4822 051 20472	4k7 5% 0.1W
R124	4822 051 20101	100Ω 5% 0.1W
R125	4822 116 52175	100Ω 5% 0.5W
R126	4822 117 11449	2k2 1% 0.1W
R127	4822 116 83933	15k 1% 0.1W
R128	4822 117 11507	6k8 1% 0.1W
R129	4822 116 52256	2k2 5% 0.5W
R130	4822 117 10833	10k 1% 0.1W
R131	4822 116 52175	100Ω 5% 0.5W
R132	4822 116 52175	100Ω 5% 0.5W
R133	4822 116 52175	100Ω 5% 0.5W
R134	4822 116 52175	100Ω 5% 0.5W
R135	4822 116 83883	470Ω 5% 0.5W
R136	4822 116 83883	470Ω 5% 0.5W
R137	4822 116 83883	470Ω 5% 0.5W
R138	4822 116 52175	100Ω 5% 0.5W
R139	4822 051 20101	100Ω 5% 0.1W
R140	4822 051 20101	100Ω 5% 0.1W
R142	4822 051 20472	4k7 5% 0.1W
R143	4822 051 20332	3k3 5% 0.1W
R144	4822 117 10837	100k 1% 0.1W
R145	4822 050 21003	10k 1% 0.6W
R146	4822 051 20472	4k7 5% 0.1W
R147	4822 117 10833	10k 1% 0.1W
R148	4822 117 11449	2k2 1% 0.1W
R149	4822 051 20223	22k 5% 0.1W
R150	4822 116 83933	15k 1% 0.1W
R151	4822 117 11449	2k2 1% 0.1W
R152	4822 051 20333	33k 5% 0.1W
R153	4822 051 10102	1k 2% 0.25W
R154	4822 050 11002	1k 1% 0.4W
R155	4822 051 10102	1k 2% 0.25W
R156	4822 051 10102	1k 2% 0.25W
R157	4822 051 10102	1k 2% 0.25W
R158	4822 051 20472	4k7 5% 0.1W
R159	4822 051 20101	100Ω 5% 0.1W
R200	4822 051 20109	10Ω 5% 0.1W
R201	4822 116 52176	10Ω 5% 0.5W
R202	4822 116 83883	470Ω 5% 0.5W
R203	4822 051 20472	4k7 5% 0.1W
R204	4822 117 10833	10k 1% 0.1W
R207	4822 051 20223	22k 5% 0.1W
R208	4822 051 20392	3k9 5% 0.1W
R209	4822 116 52176	10Ω 5% 0.5W
R210	4822 052 10101	100Ω 5% 0.33W
R211	4822 116 83883	470Ω 5% 0.5W
R212	4822 117 10834	47k 1% 0.1W
R214	4822 117 10833	10k 1% 0.1W
R216	4822 051 20223	22k 5% 0.1W
R217	4822 116 52276	3k9 5% 0.5W
R218	4822 051 20109	10Ω 5% 0.1W
R219	4822 052 10101	100Ω 5% 0.33W
R220	4822 052 10101	100Ω 5% 0.33W
R222	4822 117 10833	10k 1% 0.1W
R224	4822 051 20223	22k 5% 0.1W
R225	4822 117 10834	47k 1% 0.1W
R226	4822 116 52276	3k9 5% 0.5W
R227	4822 116 83883	470Ω 5% 0.5W
R228	4822 052 10101	100Ω 5% 0.33W
R229	4822 116 52176	10Ω 5% 0.5W
R230	4822 051 20109	10Ω 5% 0.1W
R231	4822 051 20223	22k 5% 0.1W
R232	4822 117 10834	47k 1% 0.1W
R233	4822 116 83883	470Ω 5% 0.5W
R234	4822 117 10833	10k 1% 0.1W
R237	4822 051 20223	22k 5% 0.1W
R238	4822 117 10834	47k 1% 0.1W
R239	4822 116 52276	3k9 5% 0.5W
R240	4822 116 83883	470Ω 5% 0.5W
R241	4822 052 10101	100Ω 5% 0.33W
R243	4822 117 10833	10k 1% 0.1W
R245	4822 052 10101	100Ω 5% 0.33W
R246	4822 116 52176	10Ω 5% 0.5W
R247	4822 051 20109	10Ω 5% 0.1W
R248	4822 051 20223	22k 5% 0.1W

R249	4822 117 10834	47k 1% 0.1W
R250	4822 116 83883	470Ω 5% 0.5W
R252	4822 117 10833	10k 1% 0.1W
R254	4822 100 12156	4k7 30%
R255	4822 100 12156	4k7 30%
R256	4822 100 12156	4k7 30%
R257	4822 100 12156	4k7 30%
R258	4822 100 12156	4k7 30%
R259	4822 100 12156	4k7 30%
R300	4822 051 20332	3k3 5% 0.1W
R301	4822 053 10688	6Ω 5% 1W
R302	4822 053 10688	6Ω 5% 1W
R303	4822 053 10221	220Ω 5% 1W
R304	4822 053 10688	6Ω 5% 1W
R305	4822 053 10688	6Ω 5% 1W
R306	4822 051 20332	3k3 5% 0.1W
R307	4822 053 10221	220Ω 5% 1W
R308	4822 051 20332	3k3 5% 0.1W
R309	4822 051 20332	3k3 5% 0.1W
R310	4822 053 10688	6Ω 5% 1W
R311	4822 053 10688	6Ω 5% 1W
R312	4822 053 10221	220Ω 5% 1W
R313	4822 116 52269	3k3 5% 0.5W
R314	4822 116 52269	3k3 5% 0.5W
R315	4822 051 20273	27k 5% 0.1W
R316	4822 051 20472	4k7 5% 0.1W
R317	4822 053 10688	6Ω 5% 1W
R318	4822 053 10688	6Ω 5% 1W
R319	4822 053 10688	6Ω 5% 1W
R320	4822 053 10688	6Ω 5% 1W
R321	4822 051 20332	3k3 5% 0.1W
R322	4822 053 10221	220Ω 5% 1W
R323	4822 051 20332	3k3 5% 0.1W
R324	4822 051 20332	3k3 5% 0.1W
R325	4822 051 20332	3k3 5% 0.1W
R326	4822 053 10688	6Ω 5% 1W
R327	4822 053 10688	6Ω 5% 1W
R328	4822 053 10221	220Ω 5% 1W
R329	4822 051 20332	3k3 5% 0.1W
R330	4822 053 10221	220Ω 5% 1W
R331	4822 051 20332	3k3 5% 0.1W
R332	4822 051 20273	27k 5% 0.1W
R333	4822 051 20472	4k7 5% 0.1W
R334	2120 105 92509	15Ω 5% 3W

F100	2422 549 43268	Coil var. 7.96MHz
L100	4822 157 11518	5.6μH 5%
L101	4822 157 11518	5.6μH 5%
L102	4822 157 11518	5.6μH 5%
L103	4822 157 11518	5.6μH 5%
L104	4822 157 11518	5.6μH 5%
L105	4822 157 11518	5.6μH 5%
L106	4822 157 11518	5.6μH 5%
L107	4822 157 11518	5.6μH 5%
L112	4822 157 11525	6.8μH 5%
L300	4822 157 50961	22μH
L301	2422 535 96613	22μH 10%
L302	2422 535 96613	22μH 10%
L303	4822 157 50961	22μH
L304	4822 157 50961	22μH



D100	4822 130 83757	BAS216
D101	4822 130 83757	BAS216
D102	4822 130 83757	BAS216
D103	4822 130 83757	BAS216
D104	4822 130 83757	BAS216
D105	4822 130 83757	BAS216
D154	4822 130 10654	BAT254
D300	4822 130 83757	BAS216
D301	4822 130 83757	BAS216
D302	4822 130 83757	BAS216
D303	4822 130 83757	BAS216
V101	9340 332 80135	BB148
Z100	4822 130 34233	BZX79-B5V1
Z101	4822 130 34197	BZX79-B12
Z102	4822 130 61219	BZX79-B10



Q100	5322 130 60159	BC846B
Q101	5322 130 60159	BC846B
Q103	5322 130 60159	BC846B
Q104	4822 130 44237	BF450
Q105	5322 130 60159	BC846B
Q106	5322 130 60159	BC846B

Q107	5322 130 60159	BC846B
Q108	5322 130 60159	BC846B
Q109	5322 130 60159	BC846B
Q110	5322 130 60159	BC846B
Q300	4822 130 40959	BC547B
Q301	4822 130 40959	BC547B
IC100	4822 209 83163	LM833nF
IC101	4822 209 16977	M24C32-WB6
IC102	4835 209 88475	UPD65654GF
IC103	5322 209 11322	74HC08nF
IC200	4822 209 83163	LM833nF
IC201	4822 209 83163	LM833nF
IC202	4822 209 83163	LM833nF
IC203	4822 209 33562	TDA1313T
IC204	4822 209 33562	TDA1313T
IC205	4822 209 33562	TDA1313T
IC300	4822 209 80817	L7805CV
IC301	4822 209 80817	L7805CV
IC302	4822 209 73492	L7912CV
IC303	4822 209 81726	MC7812CT
IC304	9322 123 44682	ICSTK392-120
IC305	9322 123 44682	ICSTK392-120

Scavem Module

Various

1801	2422 025 11954	2P male v 2.50
1802	2422 025 11954	2P male v 2.50
1804	4822 265 11518	10P male v
1805	4822 267 10973	1P



2000	4822 121 41857	10nF 5% 250V
2001	4822 124 41751	47μF 20% 50V
2003	4822 124 41751	47μF 20% 50V
2004	4822 124 41751	47μF 20% 50V
2005	5322 121 42386	100nF 5% 63V
2006	4822 121 70162	10nF 5% 400V
2007	4822 121 51473	470nF 20% 63V
2010	4822 121 41857	10nF 5% 250V
2012	2020 012 93545	47μF 20% 160V
2013	4822 126 13512	330pF 10% 50V
2015	2020 557 90707	15pF 10% 500V
2016	4822 121 70162	10nF 5% 400V
2017	4822 126 12726	47pF 5% 50V
2019	4822 122 32027	56pF 2% 100V
2020	4822 122 32027	56pF 2% 100V
2021	4822 122 31822	4.7pF 0.25pF 100V
2024	4822 124 42336	47μF 20% 160V
2031	4822 121 41857	10nF 5% 250V



3002	4822 117 12622	330Ω 5% 5W
3003	2120 105 90177	33Ω 5% 1W
3007	2120 106 90293	3.3Ω 5% 1W
3030	2120 106 90293	3.3Ω 5% 1W
3032	2120 105 92645	68Ω 5% 3W
3038	2120 105 90177	33Ω 5% 1W
3042	2120 105 92645	68Ω 5% 3W



7000	4822 130 40959	BC547B
7001	4822 130 40981	BC337-25
7002	4822 130 63634	2SA1837Y
7003	4822 130 40959	BC547B
7004	4822 130 40959	BC547B
7005	4822 130 40959	BC547B
7006	4822 130 10941	2SC4793
7007	4822 130 40959	BC547B
7008	4822 130 44568	BC557B
7009	4822 130 40854	BC327

CRT Panel Red

Various

1000	4822 267 10691	1P yellow
1701	2422 500 80051	10P
1702	4822 252 60151	Surge protect DSP-501N-A21F
1871	4822 267 10541	10P
1873	4822 265 11551	Push-on terminal

1874 4822 267 10691 1P yellow

-II-

2701 4822 121 70162 10nF 5% 400V
 2702 4822 121 70162 10nF 5% 400V
 2705 4822 126 14053 1nF 10% 2KV
 2717 4822 124 12386 10μF 350V
 2720 4822 124 40248 10μF 20% 63V
 2721 5322 121 42386 100nF 5% 63V
 2722 2020 557 90147 560pF 10% 500V
 2750 4822 126 13499 220pF 5% 50V
 2751 2020 300 90647 1.2nF 5% 100V
 2752 2020 558 90585 1nF 20% 1KV

-□-

3701 2120 105 92799 0.27Ω 5% 0.5W
 3703 4822 116 52175 100Ω 5% 0.5W
 3710 4822 117 12516 680Ω 2% 0.5W
 3716 2120 103 90057 100Ω 20% 0.5W
 3718 2120 103 07223 22k 20% 0.5W
 3719 2120 106 90531 5.6Ω 5% 0.5W
 3720 2120 106 90531 5.6Ω 5% 0.5W
 3730 2322 257 41332 3.3k 5% 5W
 3731 4822 117 12618 2k2 5% 5W
 3733 4822 053 20106 10M 5% 0.25W
 3735 4822 116 52175 100Ω 5% 0.5W
 3737 2120 103 11272 2.7k 5% 0.25W
 3738 4822 116 52234 100k 5% 0.5W
 3740 4822 050 11002 1k 1% 0.4W
 3742 4822 050 21002 1k 1% 0.6W
 3743 4822 050 22201 220Ω 1% 0.6W
 3745 4822 050 26809 68Ω 1% 0.6W
 3750 4822 116 52175 100Ω 5% 0.5W
 3751 4822 050 21009 10Ω 1% 0.6W
 3752 2120 103 90012 10k 10% 0.25W
 3753 2120 101 90213 43Ω 5% 0.25W
 3755 4822 050 24709 47Ω 1% 0.6W
 3756 4822 050 26809 68Ω 1% 0.6W

5701 4822 157 52333 100μH
 5702 4822 157 50965 15μH
 5703 4822 157 11517 10μH 5%
 5704 4822 157 11517 10μH 5%
 5705 4822 157 50965 15μH

-II-

6701 9322 019 69683 MUR140
 6702 9331 668 30133 BZX79-B6V2
 6705 9322 019 69683 MUR140
 6706 9322 019 69683 MUR140

-□-

7701 0061 060 00003 2SC3790E
 7702 9322 122 61686 SPS7350
 7703 9322 103 08678 2SC2383-0
 7705 9334 311 90126 MPSA92

CRT Panel Green

Various

1000 4822 267 10691 1P yellow
 1001 4822 267 10691 1P yellow
 1801A 2422 500 80051 10P
 1802A 4822 252 60151 Surge protect DSP-501N-A21F
 1881 4822 267 10541 10P
 1882 4822 267 10542 4P
 1883 4822 267 10541 10P
 1884 4822 267 10541 10P
 1886 4822 265 11551 Push-on terminal
 1887 4822 265 11551 Push-on terminal

-II-

2801 4822 121 70162 10nF 5% 400V
 2805A 4822 126 14053 1nF 10% 2KV
 2807 4822 121 70162 10nF 5% 400V
 2817 4822 124 12386 10μF 350V
 2820 4822 124 40248 10μF 20% 63V

2821 5322 121 42386 100nF 5% 63V
 2822 2020 557 90147 560pF 10% 500V
 2850 4822 126 13499 220pF 5% 50V
 2851 2020 300 90647 1.2nF 5% 100V
 2852 2020 558 90585 1nF 20% 1KV

-□-

3801A 2120 105 92799 0.27Ω 5% 0.5W
 3803 4822 116 52175 100Ω 5% 0.5W
 3810A 4822 117 12516 680Ω 2% 0.5W
 3816 2120 103 90057 100Ω 20% 0.5W
 3818A 2120 103 07223 22k 20% 0.5W
 3819A 2120 106 90531 5.6Ω 5% 0.5W
 3820A 2120 106 90531 5.6Ω 5% 0.5W
 3825 4822 116 83874 220k 5% 0.5W
 3826 4822 116 52234 100k 5% 0.5W
 3830A 2322 257 41332 3.3k 5% 5W
 3831A 4822 117 12618 2k2 5% 5W
 3833 4822 053 20106 10M 5% 0.25W
 3835 4822 116 52175 100Ω 5% 0.5W
 3837 2120 103 11272 2.7k 5% 0.25W
 3838 4822 116 52234 100k 5% 0.5W
 3840 4822 050 11002 1k 1% 0.4W
 3842 4822 050 21002 1k 1% 0.6W
 3843 4822 050 22201 220Ω 1% 0.6W
 3845 4822 050 26809 68Ω 1% 0.6W
 3850 4822 116 52175 100Ω 5% 0.5W
 3851 4822 050 21009 10Ω 1% 0.6W
 3852 2120 103 90012 10k 10% 0.25W
 3853 2120 101 90213 43Ω 5% 0.5W
 3855 4822 050 24709 47Ω 1% 0.6W
 3856 4822 050 26809 68Ω 1% 0.6W
 3857 4822 050 21003 10k 1% 0.6W

5801 4822 157 52333 100μH
 5802 4822 157 50965 15μH
 5803 4822 157 11517 10μH 5%
 5804 4822 157 11517 10μH 5%
 5805 4822 157 50965 15μH

-II-

6802 9331 668 30133 BZX79-B6V2
 6805 9322 019 69683 MUR140
 6806 4822 130 34441 BZX79-B22

-□-

7801 0061 060 00003 2SC3790E
 7802 9322 122 61686 SPS7350
 7803 9322 103 08678 2SC2383-0
 7805 9334 311 90126 MPSA92

CRT Panel Blue

Various

1000 4822 267 10691 1P yellow
 1894 4822 267 10541 10P
 1896 4822 265 11551 Push-on terminal
 1897 4822 267 10691 1P yellow
 1901A 2422 500 80051 10P
 1902A 4822 252 60151 Surge protect DSP-501N-A21F

-II-

2901 4822 121 70162 10nF 5% 400V
 2902 4822 121 70162 10nF 5% 400V
 2905A 4822 126 14053 1nF 10% 2KV
 2917 4822 124 12386 10μF 350V
 2920 4822 124 40248 10μF 20% 63V
 2921 5322 121 42386 100nF 5% 63V
 2922 2020 557 90147 560pF 10% 500V
 2950 4822 126 13499 220pF 5% 50V
 2951 2020 300 90647 1.2nF 5% 100V
 2952 2020 558 90585 1nF 20% 1KV

-□-

3901A 2120 105 92799 0.27Ω 5% 0.5W
 3903 4822 116 52175 100Ω 5% 0.5W
 3910A 4822 117 12516 680Ω 2% 0.5W

3916 2120 103 90057 100Ω 20% 0.5W
 3918A 2120 103 07223 22k 20% 0.5W
 3919A 2120 106 90531 5.6Ω 5% 0.5W
 3920A 2120 106 90531 5.6Ω 5% 0.5W
 3930A 2322 257 41332 3.3k 5% 5W
 3931A 4822 117 12618 2k2 5% 5W
 3933 4822 053 20106 10M 5% 0.25W
 3935 4822 116 52175 100Ω 5% 0.5W
 3937 2120 103 11272 2.7k 5% 0.25W
 3938 4822 116 52234 100k 5% 0.5W
 3940 4822 050 11002 1k 1% 0.4W
 3942 4822 050 21002 1k 1% 0.6W
 3943 4822 050 22201 220Ω 1% 0.6W
 3945 4822 050 26809 68Ω 1% 0.6W
 3950 4822 116 52175 100Ω 5% 0.5W
 3951 4822 050 21009 10Ω 1% 0.6W
 3952 2120 103 90012 10k 10% 0.25W
 3953 2120 101 90213 43Ω 5% 0.5W
 3955 4822 050 24709 47Ω 1% 0.6W
 3956 4822 050 26809 68Ω 1% 0.6W

5901 4822 157 52333 100μH
 5902 4822 157 50965 15μH
 5903 4822 157 11517 10μH 5%
 5904 4822 157 11517 10μH 5%
 5905 4822 157 50965 15μH

-II-

6901 9322 019 69683 MUR140
 6902 9331 668 30133 BZX79-B6V2
 6905 9322 019 69683 MUR140
 6906 9322 019 69683 MUR140

-□-

7901 0061 060 00003 2SC3790E
 7902 9322 122 61686 SPS7350
 7903 9322 103 08678 2SC2383-0
 7905 9334 311 90126 MPSA92

Audio Amplifier Panel

Various

1201 2422 086 10889 Fuse 4A
 1302 3135 011 03221 IC clip
 1304 3135 011 02481 Bracket
 1400 2422 025 15875 4P
 1401 4822 267 10537 5P
 1403 4822 492 62076 Clip for transistors
 1418 4822 267 10542 4P
 1449 2422 025 15832 5P

-II-

2201 4822 124 21913 1μF 20% 63V
 2202 4822 122 30043 10nF 80% 63V
 2203 4822 122 30043 10nF 80% 63V
 2208 4822 124 40248 10μF 20% 63V
 2301 4822 122 10182 100pF 5% 50V
 2302 4822 122 10182 100pF 5% 50V
 2303 5322 121 42386 100nF 5% 63V
 2304 5322 121 42386 100nF 5% 63V
 2305 2020 012 92615 100μF 20% 63V
 2306 4822 124 40433 47μF 20% 25V
 2307 4822 124 40433 47μF 20% 25V
 2308 4822 124 40433 47μF 20% 25V
 2309 3198 026 51020 1000μF 20% 50V
 2310 3198 026 51020 1000μF 20% 50V
 2311 4822 124 40433 47μF 20% 25V
 2312 4822 124 40433 47μF 20% 25V
 2313 5322 121 42386 100nF 5% 63V
 2314 5322 121 42386 100nF 5% 63V
 2401 2020 558 90557 1nF 10% 1KV
 2402 4822 124 80532 220μF 20% 400V
 2403 2020 558 90555 470pF 10% 1KV
 2404 4822 124 40248 10μF 20% 63V
 2405 5322 122 32331 1nF 10% 100V
 2406 4822 122 30043 10nF 80% 63V
 2407 4822 121 10863 4700pF 2% 63V
 2408 5322 122 32331 1nF 10% 100V
 2409 4822 122 31211 100pF 10% 500V
 2410 4822 124 40207 100μF 20% 25V
 2411 4822 124 12423 4700μF 20% 63V

2412	5322 121 42386	100nF 5% 63V
2413	2020 558 90557	1nF 10% 1KV
2414	4822 124 41747	680µF 20% 35V
2415	4822 124 40248	10µF 20% 63V
2416	5322 121 42386	100nF 5% 63V
2417	2020 558 90557	1nF 10% 1KV
2418	5322 121 42386	100nF 5% 63V
2423	4822 124 40433	47µF 20% 25V
2425	4822 122 10182	100pF 5% 50V
2501	5322 121 42386	100nF 5% 63V
2502	4822 124 40433	47µF 20% 25V



3000	4822 116 83884	47k 5% 0.5W
3001	4822 116 52257	22k 5% 0.5W
3003	4822 116 83874	220k 5% 0.5W
3202	4822 116 83884	47k 5% 0.5W
3204	4822 116 52257	22k 5% 0.5W
3208	4822 116 83884	47k 5% 0.5W
3260	4822 116 52257	22k 5% 0.5W
3261	4822 116 52257	22k 5% 0.5W
3301	4822 116 52234	100k 5% 0.5W
3302	4822 116 52234	100k 5% 0.5W
3303	4822 116 52234	100k 5% 0.5W
3304	4822 116 52234	100k 5% 0.5W
3305	4822 116 52175	100k 5% 0.5W
3306	4822 116 83878	270k 5% 0.5W
3307	4822 116 52234	100k 5% 0.5W
3309	2322 187 53123	12k 5% 0.5W
3310	2322 187 53123	12k 5% 0.5W
3311	4822 050 21002	1k 1% 0.6W
3312	4822 050 21002	1k 1% 0.6W
3313	4822 116 81753	407 5% 0.5W
3314	4822 116 81753	407 5% 0.5W
3403	2120 105 92596	470Ω 5% 3W
3404	4822 050 25101	510Ω 1% 0.6W
3405	4822 050 21001	100Ω 1% 0.6W
3406	4822 116 83874	220k 5% 0.5W
3410	4822 050 23012	3k01 1% 0.6W
3411	4822 116 52175	100Ω 5% 0.5W
3412	2120 105 92596	470Ω 5% 3W
3413	4822 116 52253	2k 5% 0.5W
3414	4822 116 83883	470Ω 5% 0.5W
3415	2120 105 92806	0.47Ω 5% 0.5W
3416	4822 116 83881	390Ω 5% 0.5W
3418	4822 116 83883	470Ω 5% 0.5W
3419	4822 116 52263	2k7 5% 0.5W
3420	4822 117 12169	1Ω 5% 1W
3421	4822 116 81753	407 5% 0.5W
3422	4822 116 80176	1Ω 5% 0.5W

5401	4822 157 71387	Bead 100MHz
5402	4822 157 71387	Bead 100MHz
5403	4822 157 71387	Bead 100MHz
5404	4822 157 10432	10µH 10%
5405	4822 157 71387	Bead 100MHz
5407	4822 157 71387	Bead 100MHz
5409	4822 157 71387	Bead 100MHz
5410	4822 157 71387	Bead 100MHz
5411	2422 531 02241	Switch mode transf.
5501	4822 157 71387	Bead 100MHz



6202	4822 130 30621	1N4148
6203	4822 130 30621	1N4148
6401	4822 130 30842	BAV21
6402	4835 130 37491	MUR860
6404	9322 019 68683	MUR120
6405	4822 130 41487	BYV95C
6406	4822 130 41487	BYV95C
6407	9331 214 60133	1N4150
6408	4822 130 34382	BZX79-B8V2



7202	4822 130 40959	BC547B
7203	9340 053 00116	J175
7204	9340 053 00116	J175
7207	9340 053 00116	J175
7208	9340 053 00116	J175
7301	9322 121 65682	ICSTK4432
7401	9322 013 35682	UC3845N
7403	9322 113 00687	MTW7N80E

Rear Switch Module

Various

1000	2422 015 19072	Connector
1002	2422 127 00485	Slide switch 4PGF642B
1319	4822 265 11517	1P male
1320	4822 265 11517	1P male
1321	4822 265 11557	5P
1349	2422 025 15779	5P

Front Jack panel



3001	4822 117 11927	75Ω 1% 0.1W
3002	4822 117 11927	75Ω 1% 0.1W
3006	4822 051 20223	22k 5% 0.1W
3009	4822 051 20223	22k 5% 0.1W
3011	4822 051 20392	3k9 5% 0.1W
3013	4822 051 20562	5k6 5% 0.1W 0805
3014	4822 117 11449	2k2 1% 0.1W
3016	4822 117 10833	10k 1% 0.1W
3017	4822 051 20332	3k3 5% 0.1W
3018	4822 117 10833	10k 1% 0.1W
3026	4822 117 10833	10k 1% 0.1W
3027	4822 117 10833	10k 1% 0.1W



6001	4822 130 10852	BZX284-C6V8
6003	4822 130 10852	BZX284-C6V8
6004	4822 130 10852	BZX284-C6V8
6005	4822 130 10852	BZX284-C6V8
6006	4822 130 10852	BZX284-C6V8
6010	4822 130 10852	BZX284-C6V8
6012	4822 130 10852	BZX284-C6V8



7000	4822 130 60373	BC856B
7001	4822 130 60373	BC856B

Interface Panel

Various

1000	4822 267 10933	7P male
1007	4822 265 11507	4P
1083	4822 265 11518	10P male v
1084	4822 265 11507	4P
1301	4822 267 10888	5P male
1302	2422 025 16081	11P
1304	4822 265 11518	10P male v
1305	2422 025 11143	3P male v
1308	4822 267 31673	3P male v
1309	2422 025 15516	9P
1313	4822 267 10973	9P
1315	2422 025 15516	1P
1328	2422 025 16081	11P
1333	2422 025 16081	11P
1335	4822 265 11518	10P male v
1340	2422 025 15516	9P
1341	2422 025 15516	9P
1360	4822 267 31673	3P male v
1364	4822 265 11507	4P
1366	4822 267 31673	3P male v
1375	4822 267 10888	5P male
1377	2422 025 15516	9P



2000	4822 124 40207	100µF 20% 25V
2001	4822 124 81151	22µF 50V
2002	4822 126 13838	100nF 50V 20%
2003	4822 124 40248	10µF 20% 63V
2004	4822 122 33177	10nF 20% 50V
2006	4822 124 40433	47µF 20% 25V
2007	4822 124 81151	22µF 50V
2008	4822 126 13838	100nF 50V 20%
2009	4822 121 51252	470nF 5% 63V
2010	4822 126 13838	100nF 50V 20%
2011	4822 126 13838	100nF 50V 20%
2012	4822 124 40433	47µF 20% 25V

2013	4822 126 13838	100nF 20% 50V
2025	4822 124 21913	1µF 20% 63V
2030	4822 124 21913	1µF 20% 63V
2033	4822 126 13691	27pF 1% 63V
2040	4822 121 42408	220nF 5% 63V
2041	4822 121 42408	220nF 5% 63V
2042	4822 121 42408	220nF 5% 63V
2045	4822 126 13838	100nF 20% 50V
2047	4822 126 13694	68pF 1% 63V
2048	4822 126 13694	68pF 1% 63V
2049	4822 126 13692	47pF 1% 63V
2050	5322 122 32448	10pF 5% 63V
2051	4822 124 40207	100µF 20% 25V
2054	4822 126 13694	68pF 1% 63V
2055	5322 122 32658	22pF 5% 50V
2056	4822 124 40769	4.7µF 20% 100V
2057	4822 124 40769	4.7µF 20% 100V



3000	2120 105 92524	10Ω 5% 3W
3007	4822 117 13577	330Ω 1% 1.25W 0805
3008	4822 117 13577	330Ω 1% 1.25W 0805
3009	4822 117 13577	330Ω 1% 1.25W 0805
3010	4822 117 10834	47k 1% 0.1W
3011	4822 051 20822	8k2 5% 0.1W
3012	4822 117 10834	47k 1% 0.1W
3013	4822 117 10834	47k 1% 0.1W
3014	4822 117 10834	47k 1% 0.1W
3015	4822 051 20822	8k2 5% 0.1W
3017	4822 117 11449	2k2 1% 0.1W
3018	4822 117 11449	2k2 1% 0.1W
3019	4822 117 13577	330Ω 1% 1.25W 0805
3020	4822 117 13577	330Ω 1% 1.25W 0805
3021	4822 117 13577	330Ω 1% 1.25W 0805
3022	4822 051 10102	1k 2% 0.25W
3023	4822 051 10102	1k 2% 0.25W
3024	4822 051 10102	1k 2% 0.25W
3025	4822 051 10102	1k 2% 0.25W
3026	4822 117 11449	2k2 1% 0.1W
3027	4822 051 20391	390Ω 5% 0.1W
3028	4822 051 20472	4k7 5% 0.1W
3029	4822 051 20122	1k2 5% 0.1W
3030	4822 116 83883	470Ω 5% 0.5W
3031	4822 051 20101	100Ω 5% 0.1W
3032	4822 051 20391	390Ω 5% 0.1W
3033	4822 051 20479	47Ω 5% 0.1W
3037	4822 051 10102	1k 2% 0.25W
3039	4822 051 20101	100Ω 5% 0.1W
3040	4822 116 83883	470Ω 5% 0.5W
3041	4822 051 20101	100Ω 5% 0.1W
3042	4822 051 20479	47Ω 5% 0.1W
3043	4822 051 20391	390Ω 5% 0.1W
3044	4822 117 10833	10k 1% 0.1W
3045	4822 051 20561	560Ω 5% 0.1W
3046	4822 051 20471	470Ω 5% 0.1W
3047	4822 117 11449	2k2 1% 0.1W
3048	4822 051 20101	100Ω 5% 0.1W
3049	4822 051 10102	1k 2% 0.25W
3050	4822 051 20561	560Ω 5% 0.1W
3051	4822 051 20332	3k3 5% 0.1W
3052	4822 117 11503	220Ω 1% 0.1W
3053	4822 117 13577	330Ω 1% 1.25W 0805
3054	4822 051 10102	1k 2% 0.25W
3055	4822 051 20561	560Ω 5% 0.1W
3056	4822 051 10102	1k 2% 0.25W
3057	4822 051 20101	100Ω 5% 0.1W
3058	4822 116 83883	470Ω 5% 0.5W
3059	4822 051 20101	100Ω 5% 0.1W
3060	4822 051 20391	390Ω 5% 0.1W
3061	4822 051 20479	47Ω 5% 0.1W
3092	4822 117 11507	6k8 1% 0.1W
3094	4822 051 20332	3k3 5% 0.1W
3095	4822 117 11507	6k8 1% 0.1W
3097	4822 051 20332	3k3 5% 0.1W
3098	4822 117 11507	6k8 1% 0.1W
3100	4822 051 20332	3k3 5% 0.1W
3101	4822 051 10102	1k 2% 0.25W
3102	4822 051 20479	47Ω 5% 0.1W
3103	4822 051 10102	1k 2% 0.25W
3104	4822 051 20479	47Ω 5% 0.1W
3105	4822 051 10102	1k 2% 0.25W
3106	4822 051 20479	47Ω 5% 0.1W
3107	4822 117 10353	150Ω 1% 0.1W
3108	4822 117 13577	330Ω 1% 1.25W 0805
3109	4822 051 10102	1k 2% 0.25W
3110	4822 051 10102	1k 2% 0.25W
3113	4822 051 20101	100Ω 5% 0.1W
3117	4822 051 10102	1k 2% 0.25W
3118	4822 117 11503	220Ω 1% 0.1W

3119	4822 051 20101	100Ω 5% 0.1W
3120	4822 051 10102	1k 2% 0.25W
3121	4822 117 10361	680Ω 1% 0.1W
3122	4822 117 10361	680Ω 1% 0.1W
3123	4822 116 52219	330Ω 5% 0.5W
3124	4822 117 13577	330Ω 1% 1.25W 0805
3125	4822 051 20101	100Ω 5% 0.1W
3126	4822 051 10102	1k 2% 0.25W
3127	4822 117 13577	330Ω 1% 1.25W 0805
3130	4822 051 20472	4k7 5% 0.1W
3131	4822 051 20101	100Ω 5% 0.1W
3132	4822 051 20101	100Ω 5% 0.1W
3141	4822 050 21003	10k 1% 0.6W
3142	4822 117 10361	680Ω 1% 0.1W
3143	4822 051 20229	22Ω 5% 0.1W
3144	4822 051 20472	4k7 5% 0.1W
3145	4822 051 20332	3k3 5% 0.1W
3146	4822 051 20332	3k3 5% 0.1W
3147	4822 051 10102	1k 2% 0.25W
3148	4822 051 20101	100Ω 5% 0.1W
3149	4822 051 20101	100Ω 5% 0.1W
3150	4822 051 20223	22k 5% 0.1W
3151	4822 051 20478	4.7Ω 5% 0.1W
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5000	4822 158 10604	6.8 μH 10%
5001	4822 157 51462	10μH 10%
5003	4822 157 11813	3.3μH 5%
5004	4822 157 11231	1μH 5%
5005	4822 157 11231	1μH 5%
5006	4822 157 11231	1μH 5%
5007	4822 158 10604	6.8 μH 10%



6000	4822 130 30621	1N4148
6002	4822 130 83757	BAS216
6003	4822 130 83757	BAS216
6004	4822 130 83757	BAS216
6005	4822 130 83757	BAS216
6006	4822 130 83757	BAS216
6007	4822 130 83757	BAS216
6008	4822 130 83757	BAS216
6009	4822 130 83757	BAS216
6010	4822 130 83757	BAS216
6011	4822 130 83757	BAS216
6012	4822 130 83757	BAS216
6013	4822 130 83757	BAS216
6014	4822 130 83757	BAS216
6015	4822 130 83757	BAS216



7000	4822 209 81726	MC7812CT
7001	4822 209 63995	TDA8444P/N4
7006	5322 130 60159	BC846B
7007	5322 130 60159	BC846B
7008	5322 130 60159	BC846B
7009	5322 130 60159	BC846B
7012	4822 130 60373	BC856B
7013	4822 130 60373	BC856B
7014	4822 130 60373	BC856B
7015	4822 130 60373	BC856B
7016	5322 130 60159	BC846B
7017	4822 130 60373	BC856B
7018	4822 130 60373	BC856B
7019	5322 130 60159	BC846B
7020	4822 130 60373	BC856B
7022	4822 130 60373	BC856B
7023	5322 130 60159	BC846B
7024	4822 130 60373	BC856B
7025	4822 130 60373	BC856B
7026	5322 130 60159	BC846B
7027	4822 130 60373	BC856B
7028	4822 130 60373	BC856B
7029	4822 130 60373	BC856B
7030	4822 130 60373	BC856B
7031	4822 130 60373	BC856B
7035	5322 130 60159	BC846B
7036	5322 130 60159	BC846B
7037	4822 130 60373	BC856B

Customer Control Panel

Various

	3135 014 07311	Holder
1001	2422 128 02854	Tact switch
1002	2422 128 02854	Tact switch
1003	2422 128 02854	Tact switch
1004	2422 128 02854	Tact switch
1005	2422 128 02854	Tact switch
1006	2422 128 02854	Tact switch
1007	2422 128 02854	Tact switch
1008	2422 128 02854	Tact switch
1009	2422 128 02854	Tact switch
1200	2422 025 15524	7P
1207	4822 267 10897	4P male
1215	4822 265 11517	1P

Small Signal Panel [K1-K7]

Various

0002	4822 267 10977	IC socket 42P
0008	5322 255 40958	IC socket 8P
0310	4822 267 10964	9P male v 2.5 red
0311	4822 267 10978	7P male v 2.5 black
0315	4822 267 10979	9P male v 2.5 black
0328	4822 267 10981	11P male v 2.5 black
0333	4822 267 10962	11P
0340	4822 267 10974	9P male v 2.5
0341	4822 267 10974	9P male 2.5
0344	4822 267 10963	3P
0356	4822 267 10963	3P male v 2.5 black
0360	4822 267 10967	3P male v 2.5 black
0364	2422 025 15638	4P male v 1.25
0366	2422 025 16159	3P male v 1.25
1001	4822 242 10972	Crystal 6MHz
1020	3104 328 03621	Small signal panel
1102	4822 210 10841	UV1316/A I-2
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5.5MHz
1109	4822 242 81436	Filter OFWK3953M
1200	4822 267 11033	Socket 3 x cinch
1201	4822 267 10771	Socket 2 x SCART black
1202	4822 267 60385	Socket SCART black
1305	5322 242 73686	Filter 12MHz
1525	4822 242 10695	Crystal 4.433 619 MHz
1528	4822 242 10697	Crystal 3.579 545 MHz
1601	4822 242 10685	Crystal 12MHz
1751	4822 242 10434	Crystal 18.432MHz



2001	4822 126 14585	100nF 10% 50V
2002	4822 126 14305	100nF 10% 16V 0603
2003	4822 126 14305	100nF 10% 18V 0603
2005	4822 126 14305	100nF 10% 16V 0603
2006	4822 126 14305	100nF 10% 16V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2011	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14305	100nF 10% 16V 0603
2013	4822 126 14076	220nF 80-20% 25V
2014	4822 126 11669	27pF
2015	4822 126 14585	100nF 10% 50V
2016	5322 122 32659	33pF 5% 50V
2018	4822 124 40248	10μF 20% 63V
2019	4822 126 14305	100nF 10% 16V 0603
2020	5322 122 32658	22pF 5% 50V
2021	4822 126 14585	100nF 10% 50V
2022	4822 126 14076	220nF 80-20% 25V
2023	4822 126 14305	100nF 10% 16V 0603
2024	5322 126 11578	1nF 10% 50V 0603
2025	4822 126 14305	100nF 10% 16V 0603
2026	4822 126 14305	100nF 10% 16V 0603
2027	4822 126 14305	100nF 10% 16V 0603
2028	4822 126 14305	100nF 10% 16V 0603
2029	4822 124 40433	47μF 20% 25V
2030	4822 124 40433	47μF 20% 25V
2031	4822 126 14305	100nF 10% 16V 0603
2032	4822 126 14305	100nF 10% 16V 0603
2035	4822 126 14585	100nF 10% 50V
2037	4822 126 14585	100nF 10% 50V
2038	4822 126 14585	100nF 10% 50V
2039	4822 126 13883	220pF 5% 50V

2040	4822 122 33177	10nF 20% 50V
2042	4822 051 30331	330Ω 5% 0.062W 0603
2043	4822 122 33777	330Ω 5% 0.062W 0603
2044	4822 122 33777	330Ω 5% 0.062W 0603
2045	4822 124 41584	100μF 20% 10V
2046	4822 126 14585	100nF 10% 50V
2049	4822 126 14226	82pF 5% 50V 0603
2050	4822 126 14226	82pF 5% 50V 0603
2051	4822 126 14226	82pF 5% 50V 0603
2052	4822 126 14226	82pF 5% 50V 0603
2053	4822 126 14226	82pF 5% 50V 0603
2054	4822 126 14226	82pF 5% 50V 0603
2101	4822 124 40196	220μF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF +0.5 100V
2109	4822 124 22652	2.2μF 20% 50V
2110	4822 124 21913	1μF 20% 63V
2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 41584	100μF 20% 10V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 33244	8.2pF 5% 50V
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 80-20% 25V
2121	4822 124 41584	100μF 20% 10V
2125	4822 122 33177	10nF 20% 50V
2126	4822 124 40433	47μF 20% 25V
2127	4822 126 14076	220nF 80-20% 25V
2202	5322 122 31863	330pF 5% 63V
2203	5322 122 31863	330pF 5% 63V
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 124 40248	10μF 20% 63V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	330pF 5% 63V
2210	5322 122 32531	100pF 5% 50V
2212	4822 124 40248	10μF 20% 63V
2213	4822 126 14305	100nF 10% 16V 0603
2215	5322 122 31863	330pF 5% 63V
2216	5322 122 31863	330pF 5% 63V
2217	5322 122 32531	100pF 5% 50V
2219	5322 122 31863	330pF 5% 63V
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 14076	220nF 25V. P8020
2222	4822 124 40433	47μF 20% 25V
2224	5322 122 32531	100pF 5% 50V
2226	5322 122 32531	100pF 5% 50V
2228	5322 122 31863	330pF 5% 63V
2229	5322 122 31863	330pF 5% 63V
2235	4822 122 33891	3.3nF 10% 63V
2300	4822 124 40196	220μF 20% 16V
2301	4822 126 13838	100nF 50V 20%
2302	4822 126 13838	100nF 50V 20%
2303	4822 124 22652	2.2μF 20% 50V
2304	4822 126 14305	100nF 10% 16V 0603
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311	4822 124 40196	220μF 20% 16V
2312	4822 126 14305	100nF 10% 16V 0603
2313	4822 126 13694	68pF 1% 63V
2315	5322 122 34098	10nF 10% 63V
2321	4822 126 13881	470pF 5% 50V
2322	4822 126 13881	470pF 5% 50V
2323	5322 121 42386	100nF 5% 63V
2331	5322 126 11583	10nF 10% 50V 0603
2340	4822 126 13881	470pF 5% 50V
2343	5322 122 32448	10pF 5% 63V
2344	4822 126 14305	100nF 10% 16V 0603
2351	4822 126 13849	220nF 10% 16V
2403	4822 126 13838	100nF 50V 20%
2404	4822 126 13838	100nF 50V 20%
2405	4822 126 13838	100nF 50V 20%
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2410	4822 126 14305	100nF 10% 16V 0603
2411	4822 126 14305	100nF 10% 16V 0603
2412	4822 126 14305	100nF 10% 16V 0603
2414	3198 021 90030	0Ω jumper 0603
2415	3198 021 90030	0Ω jumper 0603
2416	3198 021 90030	0Ω jumper 0603
2417	4822 126 14305	100nF 10% 16V 0603
2418	4822 124 40769	4.7μF 20% 100V
2419	5322 122 32654	22nF 10% 63V
2423	4822 124 21913	1μF 20% 63V
2425	3198 021 90030	0Ω jumper 0603
2428	4822 126 13956	68pF 5% 63V 0603
2429	4822 126 13956	68pF 5% 63V 0603

2430	5322 122 32269	6.8pF 5% 50V	2647	4822 126 14507	18pF 5% 50V 0603	2829	5322 126 11578	1nF 10% 50V 0603
2501	4822 126 14305	100nF 10% 16V 0603	2648	4822 126 14507	18pF 5% 50V 0603	2830	4822 122 33177	10nF 20% 50V
2502	4822 126 14305	100nF 10% 16V 0603	2649	5322 122 32658	22pF 5% 50V	2831	4822 124 12095	100µF 20% 16V
2503	4822 126 14305	100nF 10% 16V 0603	2650	5322 122 32658	22pF 5% 50V	2832	4822 126 14494	22nF 10% 25V 0603
2504	4822 126 14305	100nF 10% 16V 0603	2651	4822 124 12095	100µF 20% 16V	2833	4822 126 14494	22nF 10% 25V 0603
2505	4822 126 14305	100nF 10% 16V 0603	2652	4822 126 14585	100nF 10% 50V	2836	4822 126 13692	47pF 1% 63V
2506	4822 126 14305	100nF 10% 16V 0603	2655	4822 126 14305	100nF 10% 16V 0603	2837	5322 126 11583	10nF 10% 50V 0603
2507	4822 126 14305	100nF 10% 16V 0603	2656	4822 126 14305	100nF 10% 16V 0603	2838	4822 122 33761	22pF 5% 50V
2508	4822 126 14305	100nF 10% 16V 0603	2657	4822 124 40248	10µF 20% 63V	2839	5322 126 11583	10nF 10% 50V 0603
2509	4822 126 14305	100nF 10% 16V 0603	2658	4822 126 14585	100nF 10% 50V	2840	5322 126 11583	10nF 10% 50V 0603
2510	4822 126 14305	100nF 10% 16V 0603	2659	4822 126 14585	100nF 10% 50V	2841	4822 126 13482	470nF 80/20% 16V
2511	4822 126 14305	100nF 10% 16V 0603	2660	4822 126 14585	100nF 10% 50V	2844	4822 126 14043	1µF 20% 16V
2512	4822 126 14305	100nF 10% 16V 0603	2661	4822 126 14585	100nF 10% 50V	2845	4822 126 14043	1µF 20% 16V
2520	4822 126 14305	100nF 10% 16V 0603	2662	4822 126 14585	100nF 10% 50V	2846	5322 124 41979	10µF 10% 16V
2521	4822 126 14305	100nF 10% 16V 0603	2663	4822 126 14585	100nF 10% 50V	2847	5322 124 41979	10µF 10% 16V
2522	5322 126 11579	3.3nF 10% 63V	2664	4822 126 14585	100nF 10% 50V	2848	5322 124 41979	10µF 10% 16V
2525	4822 126 14507	18pF 5% 50V 0603	2665	4822 126 14585	100nF 10% 50V	2849	5322 124 41979	10µF 10% 16V
2528	4822 122 33752	15pF 5% 50V	2666	4822 126 14585	100nF 10% 50V	2887	4822 122 32927	220nF 20% 50V
2532	4822 126 14043	1µF 20% 16V	2667	4822 126 14585	100nF 10% 50V	2888	4822 122 32927	220nF 20% 50V
2534	5322 126 10223	4.7nF 10% 63V	2670	4822 126 14585	100nF 10% 50V	2890	4822 126 14076	220nF 25V. P8020
2535	4822 126 14491	2.2µF 10V	2671	4822 126 14585	100nF 10% 50V	2891	4822 126 13838	100nF 50V 20%
2536	4822 126 14585	100nF 10% 50V	2751	4822 122 33761	22pF 5% 50V	2892	4822 126 13482	470nF 80/20% 16V
2537	4822 126 14585	100nF 10% 50V	2752	4822 126 13692	47pF 1% 63V	2895	4822 122 33177	10nF 20% 50V
2538	4822 124 40433	47µF 20% 25V	2753	4822 122 32927	220nF 20% 50V			
2539	4822 126 14305	100nF 10% 16V 0603	2754	5322 122 32268	470pF 10% 50V			
2540	4822 124 40433	47µF 20% 25V	2755	5322 122 32268	470pF 10% 50V			
2541	5322 122 32654	22nF 10% 63V	2756	5322 122 32268	470pF 10% 50V			
2545	4822 126 14305	100nF 10% 16V 0603	2757	5322 122 32268	470pF 10% 50V			
2550	4822 126 14305	100nF 10% 16V 0603	2758	5322 122 32268	470pF 10% 50V			
2551	5322 122 32448	10pF 5% 63V	2759	5322 122 32268	470pF 10% 50V			
2552	5322 122 32269	6.8pF 5% 50V	2760	5322 122 32268	470pF 10% 50V			
2553	4822 126 13838	100nF 20% 50V	2761	4822 122 32927	220nF 20% 50V			
2554	4822 126 13838	100nF 20% 50V	2762	4822 122 32927	220nF 20% 50V			
2555	4822 126 14305	100nF 10% 16V 0603	2763	5322 122 32268	470pF 10% 50V			
2556	4822 126 14305	100nF 10% 16V 0603	2764	5322 122 32268	470pF 10% 50V			
2557	4822 126 14305	100nF 10% 16V 0603	2765	4822 124 12095	100µF 20% 16V			
2558	4822 126 14305	100nF 10% 16V 0603	2766	4822 124 12095	100µF 20% 16V			
2559	4822 124 40207	100µF 20% 25V	2767	5322 122 32286	3.3pF 5% 50V			
2560	4822 126 14305	100nF 10% 16V 0603	2768	5322 122 32286	3.3pF 5% 50V			
2561	4822 124 81286	47µF 20% 16V	2769	4822 126 13482	470nF 80/20% 16V			
2562	4822 126 14305	100nF 10% 16V 0603	2770	5322 126 11583	10nF 10% 50V 0603			
2563	4822 124 81286	47µF 20% 16V	2771	4822 122 33177	10nF 20% 50V			
2565	4822 122 33753	150pF 5% 50V	2772	4822 122 33761	22pF 5% 50V			
2566	4822 126 13956	68pF 5% 63V 0603	2773	5322 122 31647	1nF 10% 63V			
2567	5322 126 10184	820pF 5% 50V	2774	5322 122 31647	1nF 10% 63V			
2568	4822 122 31765	100pF 2% 63V	2775	4822 126 13482	470nF 80/20% 16V			
2569	4822 122 33177	10nF 20% 50V	2776	4822 122 33761	22pF 5% 50V			
2601	4822 126 14305	100nF 10% 16V 0603	2777	5322 124 41979	10µF 10% 16V			
2602	4822 124 81151	22µF 50V	2778	5322 124 41979	10µF 10% 16V			
2603	4822 126 14585	100nF 10% 50V	2779	4822 126 13838	100nF 50V 20%			
2604	4822 124 41584	100µF 20% 10V	2780	5322 124 41979	10µF 10% 16V			
2605	4822 126 14585	100nF 10% 50V	2781	4822 126 13838	100nF 50V 20%			
2606	4822 124 80144	220µF 20% 25V	2782	5322 124 41979	10µF 10% 16V			
2607	4822 126 14585	100nF 10% 50V	2783	4822 126 13482	470nF 80/20% 16V			
2608	4822 124 81151	22µF 50V	2784	4822 126 13482	470nF 80/20% 16V			
2609	4822 126 14585	100nF 10% 50V	2785	5322 122 31647	1nF 10% 63V			
2610	4822 124 81151	22µF 50V	2786	5322 122 31647	1nF 10% 63V			
2611	4822 126 14305	100nF 10% 16V 0603	2790	4822 122 33761	22pF 5% 50V			
2612	4822 124 40248	10µF 20% 63V	2791	4822 122 33761	22pF 5% 50V			
2613	4822 126 14585	100nF 10% 50V	2792	5322 126 11583	10nF 10% 50V 0603			
2615	4822 126 13692	47pF 1% 63V	2793	4822 122 33177	10nF 20% 50V			
2616	4822 126 13692	47pF 1% 63V	2797	4822 122 33177	10nF 20% 50V			
2617	4822 126 14218	3.9pF 50V	2798	4822 122 33177	10nF 20% 50V			
2618	4822 126 11669	27pF	2799	5322 122 32658	22pF 5% 50V			
2619	4822 126 11663	12pF	2800	5322 122 32658	22pF 5% 50V			
2620	4822 126 14218	3.9pF 50V	2801	4822 122 33761	22pF 5% 50V			
2621	4822 126 11669	27pF	2802	4822 122 32927	220nF 20% 50V			
2623	4822 126 11663	12pF	2803	4822 122 32927	220nF 20% 50V			
2624	4822 126 14218	3.9pF 50V	2804	4822 122 32927	220nF 20% 50V			
2625	4822 126 11669	27pF	2805	4822 122 32927	220nF 20% 50V			
2626	4822 126 11663	12pF	2806	4822 122 32927	220nF 20% 50V			
2627	4822 122 31765	100pF 2% 63V	2807	4822 122 32927	220nF 20% 50V			
2628	4822 126 14585	100nF 10% 50V	2808	4822 124 12095	100µF 20% 16V			
2629	4822 126 14225	56pF 5% 50V 0603	2809	5322 126 10511	1nF 5% 50V			
2630	4822 126 14494	22nF 10% 25V 0603	2810	4822 122 33127	2.2nF 10% 63V			
2631	4822 122 31765	100pF 2% 63V	2811	5322 126 10511	1nF 5% 50V			
2632	4822 126 14507	18pF 5% 50V 0603	2813	5322 126 11583	10nF 10% 50V 0603			
2633	4822 126 14494	22nF 10% 25V 0603	2814	5322 126 11583	10nF 10% 50V 0603			
2634	4822 122 33752	15pF 5% 50V	2815	5322 126 11583	10nF 10% 50V 0603			
2635	4822 122 33777	47pF 5% 63V	2816	4822 124 12095	100µF 20% 16V			
2636	4822 126 14508	180pF 5% 50V 0603	2817	5322 126 11583	10nF 10% 50V 0603			
2637	4822 126 14507	18pF 5% 50V 0603	2818	4822 124 12095	100µF 20% 16V			
2638	4822 126 14494	22nF 10% 25V 0603	2819	4822 124 12095	100µF 20% 16V			
2639	4822 122 33752	15pF 5% 50V	2820	5322 126 11578	1nF 10% 50V 0603			
2640	4822 122 33777	47pF 5% 63V	2821	4822 122 33177	10nF 20% 50V			
2641	4822 126 14508	180pF 5% 50V 0603	2822	5322 126 11578	1nF 10% 50V 0603			
2642	4822 126 14507	18pF 5% 50V 0603	2824	4822 124 12095	100µF 20% 16V			
2643	4822 126 14494	22nF 10% 25V 0603	2825	4822 122 33177	10nF 20% 50V			
2644	4822 122 33752	15pF 5% 50V	2826	4822 122 33761	22pF 5% 50V			
2645	4822 122 33777	47pF 5% 63V	2827	5322 126 11578	1nF 10% 50V 0603			
2646	4822 126 14508	180pF 5% 50V 0603	2828	4822 122 33177	10nF 20% 50V			



3001	2322 704 66201	620Ω 1% 0.063W 0603
3003	4822 117 13521	470Ω 5% RESN 0.63W
3004	4822 117 13521	470Ω 5% RESN 0.63W
3005	4822 117 13521	470Ω 5% RESN 0.63W
3006	4822 051 30103	10k 5% 0.062W
3007	4822 051 30103	10k 5% 0.062W
3009	4822 117 13521	470Ω 5% RESN 0.63W
3010	4822 051 30103	10k 5% 0.062W
3011	4822 051 30472	4k7 5% 0.062W
3013	4822 051 30102	1k 5% 0.062W
3014	4822 117 12925	47k 1% 0.063W 0603
3015	4822 117 12925	47k 1% 0.063W 0603
3016	4822 051 30102	1k 5% 0.062W
3017	4822 051 30102	1k 5% 0.062W
3018	4822 051 30221	220Ω 5% 0.062W
3019	4822 051 30681	680Ω 5% 0.062W
3020	4822 051 30221	220Ω 5% 0.062W
3021	4822 051 30221	220Ω 5% 0.062W
3022	4822 051 10102	1k 2% 0.25W
3023	4822 117 13521	470Ω 5% RESN 0.63W
3024	4822 051 30471	470Ω 5% 0.062W
3027	4822 117 13521	470Ω 5% RESN 0.63W
3028	4822 117 13521	470Ω 5% RESN 0.63W
3029	4822 051 30471	470Ω 5% 0.0

3135	4822 051 20472	4k7 5% 0.1W	3331	4822 117 12925	47k 1% 0.063W 0603	3637	4822 117 10361	680Ω 1% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W	3332	4822 051 30183	18k 5% 0.062W	3639	4822 051 30101	100Ω 5% 0.062W
3137	4822 051 10102	1k 2% 0.25W	3340	4822 051 30123	12k 5% 0.062W	3640	4822 117 12917	1Ω 5% 0.062W 0603
3138	4822 117 11448	180Ω 1% 0.1W	3341	4822 051 10102	1k 2% 0.25W	3641	4822 051 30102	1k 5% 0.062W
3139	4822 117 11139	1k5 1% 0.1W	3342	4822 051 30103	10k 5% 0.062W	3644	4822 051 30102	1k 5% 0.062W
3140	4822 116 83933	15k 1% 0.1W	3343	4822 117 10837	100k 1% 0.1W	3645	4822 051 30102	1k 5% 0.062W
3141	4822 051 30333	33k 5% 0.062W	3344	4822 051 30103	10k 5% 0.062W	3646	4822 051 20472	4k7 5% 0.1W
3142	4822 051 30102	1k 5% 0.062W	3350	4822 051 30474	470k 5% 0.062W	3647	4822 051 30689	68Ω 5% 0.063W 0603
3143	4822 051 30102	1k 5% 0.062W	3351	4822 117 12891	220k 1%	3648	4822 051 30689	68Ω 5% 0.063W 0603
3145	4822 051 30101	100Ω 5% 0.062W	3352	4822 051 30332	3k3 5% 0.062W	3649	4822 051 30689	68Ω 5% 0.063W 0603
3146	4822 051 20223	22k 5% 0.1W	3353	4822 117 12903	1k8 1% 0.063W 0603	3650	4822 051 30121	120Ω 5% 0.062W
3147	4822 052 10109	10Ω 5% 0.33W	3369	4822 051 30103	10k 5% 0.062W	3651	4822 051 30121	120Ω 5% 0.062W
3150	4822 052 10189	18Ω 5% 0.33W	3370	4822 051 30103	10k 5% 0.062W	3652	4822 051 30121	120Ω 5% 0.062W
3151	4822 052 10159	15Ω 5% 0.33W	3400	4822 117 11454	820Ω 1% 0.1W	3653	4822 051 30689	68Ω 5% 0.063W 0603
3200	4822 117 10353	150Ω 1% 0.1W	3401	4822 117 11454	820Ω 1% 0.1W	3654	4822 051 30689	68Ω 5% 0.063W 0603
3201	4822 117 10353	150Ω 1% 0.1W	3402	4822 117 11454	820Ω 1% 0.1W	3655	4822 051 30101	100Ω 5% 0.062W
3202	4822 117 10353	150Ω 1% 0.1W	3404	4822 051 20479	47Ω 5% 0.1W	3657	4822 051 30101	100Ω 5% 0.062W
3203	4822 117 10353	150Ω 1% 0.1W	3405	4822 051 20479	47Ω 5% 0.1W	3659	4822 051 30101	100Ω 5% 0.062W
3204	4822 052 10688	6Ω 8 5% 0.33W	3406	4822 051 20479	47Ω 5% 0.1W	3751	4822 051 30223	22k 5% 0.062W
3205	4822 051 20471	470Ω 5% 0.1W	3407	4822 117 10361	680Ω 1% 0.1W	3752	4822 051 30223	22k 5% 0.062W
3206	4822 117 12521	68Ω 1% 0.1W	3408	4822 117 10361	680Ω 1% 0.1W	3753	4822 051 30682	6k8 5% 0.062W
3207	4822 051 20561	560Ω 5% 0.1W	3409	4822 117 10361	680Ω 1% 0.1W	3754	4822 051 30682	6k8 5% 0.062W
3208	4822 051 20399	39Ω 5% 0.1W	3420	3198 021 90030	0Ω jumper 0603	3755	4822 051 30101	100Ω 5% 0.062W
3209	4822 117 11927	75Ω 1% 0.1W	3423	4822 117 11449	2k2 1% 0.1W	3756	4822 051 30101	100Ω 5% 0.062W
3210	4822 117 11927	75Ω 1% 0.1W	3425	4822 051 30155	1M5 5% 0.062W	3758	4822 117 12925	47k 1% 0.063W 0603
3211	4822 117 11927	75Ω 1% 0.1W	3428	4822 051 30222	2k2 5% 0.062W	3760	4822 117 12925	47k 1% 0.063W 0603
3212	4822 051 20399	39Ω 5% 0.1W	3429	4822 117 12968	820Ω 5% 0.62W	3761	4822 051 30223	22k 5% 0.062W
3213	4822 117 11927	75Ω 1% 0.1W	3430	4822 051 30181	180Ω 5% 0.062W	3762	4822 051 20472	4k7 5% 0.1W
3215	4822 117 11927	75Ω 1% 0.1W	3431	4822 051 30682	6k8 5% 0.062W	3765	4822 051 30683	68k 5% 0.062W
3216	4822 051 20822	8k2 5% 0.1W	3432	4822 051 30101	100Ω 5% 0.062W	3766	4822 051 30103	10k 5% 0.062W
3218	4822 051 20392	3k9 5% 0.1W	3433	4822 051 30101	100Ω 5% 0.062W	3767	4822 051 30683	68k 5% 0.062W
3219	4822 051 10102	1k 2% 0.25W	3434	4822 052 10478	4Ω 7 5% 0.33W	3768	4822 051 30103	10k 5% 0.062W
3220	4822 051 10102	1k 2% 0.25W	3436	4822 051 20008	0Ω jumper 0805	3769	4822 117 11507	6k8 1% 0.1W
3221	4822 117 10353	150Ω 1% 0.1W	3438	4822 117 10834	47k 1% 0.1W	3770	4822 117 11507	6k8 1% 0.1W
3222	4822 117 10353	150Ω 1% 0.1W	3439	4822 117 10833	10k 1% 0.1W	3771	4822 116 83933	15k 1% 0.1W
3223	4822 117 10353	150Ω 1% 0.1W	3440	4822 051 20333	33k 5% 0.1W	3772	4822 116 83933	15k 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W	3441	4822 051 20223	22k 5% 0.1W	3773	4822 051 20472	4k7 5% 0.1W
3225	4822 052 10688	6Ω 8 5% 0.33W	3442	4822 051 20333	33k 5% 0.1W	3776	4822 051 20333	33k 5% 0.1W
3228	4822 051 30101	100Ω 5% 0.062W	3443	4822 051 20683	68k 5% 0.1W	3777	4822 117 11148	56k 1% 0.1W
3229	4822 051 30103	10k 5% 0.062W	3521	4822 117 13632	100k 1% 0.063 0.62W	3778	4822 051 20333	33k 5% 0.1W
3230	4822 051 20561	560Ω 5% 0.1W	3529	4822 117 13522	100Ω 5% RESN 0.63W	3779	4822 117 11148	56k 1% 0.1W
3232	4822 117 12521	68Ω 1% 0.1W	3530	4822 051 30101	100Ω 5% 0.062W	3780	4822 051 30223	22k 5% 0.062W
3233	4822 117 10353	150Ω 1% 0.1W	3531	4822 051 30101	100Ω 5% 0.062W	3781	4822 051 30561	560Ω 5% 0.062W
3235	4822 117 11927	75Ω 1% 0.1W	3532	4822 116 83933	15k 1% 0.1W	3782	4822 051 30101	100Ω 5% 0.062W
3236	4822 117 11927	75Ω 1% 0.1W	3538	4822 052 10478	4Ω 7 5% 0.33W	3783	4822 051 20101	100Ω 5% 0.1W
3240	4822 117 11927	75Ω 1% 0.1W	3545	4822 051 30471	470Ω 5% 0.062W	3784	4822 051 30682	6k8 5% 0.062W
3241	4822 117 10353	150Ω 1% 0.1W	3546	4822 051 30471	470Ω 5% 0.062W	3785	4822 051 30682	6k8 5% 0.062W
3242	4822 051 20822	8k2 5% 0.1W	3551	4822 051 30271	270Ω 5% 0.062W	3786	4822 051 30223	22k 5% 0.062W
3243	4822 117 10353	150Ω 1% 0.1W	3553	4822 117 10353	150Ω 1% 0.1W	3787	4822 051 30223	22k 5% 0.062W
3244	4822 051 10102	1k 2% 0.25W	3554	4822 051 10102	1k 2% 0.25W	3788	4822 051 30682	6k8 5% 0.062W
3245	4822 051 20392	3k9 5% 0.1W	3556	4822 117 10833	10k 1% 0.1W	3789	4822 051 30682	6k8 5% 0.062W
3246	4822 051 10102	1k 2% 0.25W	3557	4822 051 30479	47Ω 5% 0.062W	3790	4822 051 30223	22k 5% 0.062W
3248	4822 117 13577	330Ω 1% 1.25W 0805	3565	4822 051 30101	100Ω 5% 0.062W	3791	4822 051 30223	22k 5% 0.062W
3249	4822 117 12955	2k7 1% 0.1W 0805	3566	4822 051 30101	100Ω 5% 0.062W	3792	4822 051 30682	6k8 5% 0.062W
3250	4822 051 20101	100Ω 5% 0.1W	3567	4822 051 20101	100Ω 5% 0.1W	3793	4822 051 30682	6k8 5% 0.062W
3252	4822 051 20339	33Ω 5% 0.1W	3568	4822 051 20471	470Ω 5% 0.1W	3794	4822 051 30223	22k 5% 0.062W
3253	4822 051 20391	390Ω 5% 0.1W	3569	4822 051 30479	47Ω 5% 0.062W	3795	4822 051 30223	22k 5% 0.062W
3254	4822 051 10102	1k 2% 0.25W	3570	4822 117 13522	100Ω 5% RESN 0.63W	3796	4822 051 20121	120Ω 5% 0.1W
3255	4822 051 10102	1k 2% 0.25W	3573	4822 051 20109	10Ω 5% 0.1W	3797	4822 051 20121	120Ω 5% 0.1W
3256	4822 117 11927	75Ω 1% 0.1W	3574	4822 051 20008	0Ω jumper 0805	3798	4822 117 10834	47k 1% 0.1W
3257	4822 117 10353	150Ω 1% 0.1W	3590	4822 117 11454	820Ω 1% 0.1W	3799	4822 117 12925	47k 1% 0.063W 0603
3258	4822 117 10353	150Ω 1% 0.1W	3602	4822 117 12139	22Ω 5% 0.062W	3811	4822 051 30101	100Ω 5% 0.062W
3259	4822 051 30273	27k 5% 0.062W	3603	4822 051 30101	100Ω 5% 0.062W	3812	4822 051 30101	100Ω 5% 0.062W
3262	4822 117 12925	47k 1% 0.063W 0603	3605	4822 051 30101	100Ω 5% 0.062W	3813	4822 051 30101	100Ω 5% 0.062W
3263	4822 051 30221	220Ω 5% 0.062W	3606	4822 051 30109	10Ω 5% 0.062W	3814	4822 051 30101	100Ω 5% 0.062W
3264	4822 051 20822	8k2 5% 0.1W	3607	4822 051 30392	3k9 5% 0.063W 0603	3817	4822 117 10837	100k 1% 0.1W
3265	4822 117 12955	2k7 1% 0.1W 0805	3608	4822 051 30272	2k7 5% 0.062W	3818	4822 051 30101	100Ω 5% 0.062W
3266	4822 117 10833	10k 1% 0.1W	3609	4822 117 12917	1Ω 5% 0.062W 0603	3819	4822 051 30101	100Ω 5% 0.062W
3272	4822 117 10353	150Ω 1% 0.1W	3610	4822 051 30391	390Ω 5% 0.062W	3820	4822 051 30101	100Ω 5% 0.062W
3280	4822 117 10353	150Ω 1% 0.1W	3611	4822 051 30102	1k 5% 0.062W	3821	4822 051 30103	10k 5% 0.062W
3300	4822 052 10688	6Ω 8 5% 0.33W	3612	4822 051 30391	390Ω 5% 0.062W	3822	4822 117 12925	47k 5% 0.1W
3302	4822 051 30101	100Ω 5% 0.062W	3613	4822 051 30391	390Ω 5% 0.062W	3824	4822 051 20101	100Ω 5% 0.1W
3303	4822 051 30101	100Ω 5% 0.062W	3614	4822 051 30479	47Ω 5% 0.062W	3825	4822 051 30563	56k 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W	3615	4822 051 30471	470Ω 5% 0.062W	3826	4822 117 10353	150Ω 1% 0.1W
3307	4822 051 30102	1k 5% 0.062W	3616	4822 051 30472	4k7 5% 0.062W	3827	4822 051 30101	100Ω 5% 0.062W
3308	4822 051 30102	1k 5% 0.062W	3617	4822 051 30472	4k7 5% 0.062W	3828	4822 117 12925	47k 1% 0.063W 0603
3309	4822 117 13632	100k 5% 0.062W	3618	4822 051 30221	220Ω 5% 0.062W	3829	4822 117 12925	47k 1% 0.063W 0603
3310	4822 051 20332	3k3 5% 0.1W	3619	4822 051 30472	4k7 5% 0.062W	3830	4822 051 20121	120Ω 5% 0.1W
3311	4822 051 30102	1k 5% 0.062W	3620	4822 051 30472	4k7 5% 0.062W	3831	4822 051 20121	120Ω 5% 0.1W
3312	4822 117 13632	100k 1% 0.063 0.62W	3621	4822 051 30101	100Ω 5% 0.062W	3832	4822 051 10102	1k 2% 0.25W
3315	4822 051 20182	1k8 5% 0.1W	3623	4822 051 30101	100Ω 5% 0.062W	3833	4822 051 30103	10k 5% 0.062W
3316	4822 051 10102	1k 2% 0.25W	3625	4822 051 30105	1M 5% 0.062W	3837	4822 051 30563	56k 5% 0.062W
3317	4822 051 30102	1k 5% 0.062W	3626	4822 051 30101	100Ω 5% 0.062W	3838	4822 051 30101	100Ω 5% 0.062W
3318	4822 051 30102	1k 5% 0.062W	3628	4822 051 30101	100Ω 5% 0.062W	3839	4822 051 30101	100Ω 5% 0.062W
3320	4822 051 30102	1k 5% 0.062W	3629	4822 051 30332	3k3 5% 0.062W	3840	4822 051 30103	10k 5% 0.062W
3321	4822 051 30102	1k 5% 0.062W	3631	4822 051 20008	0Ω jumper 0805	3841	4822 051 30101	

3847	4822 117 12925	47k 1% 0.063W 0603
3848	4822 051 30101	100Ω 5% 0.062W
3849	4822 051 30101	100Ω 5% 0.062W
3852	4822 051 30223	22k 5% 0.062W
3853	4822 051 30223	22k 5% 0.062W
3890	4822 051 30331	330Ω 5% 0.062W
3891	4822 051 30272	2k7 5% 0.062W
3892	4822 117 13577	330Ω 1% 0.1W 0805
3893	4822 117 12955	2k7 1% 0.1W 0805
3894	4822 117 10834	47k 1% 0.1W
3895	4822 051 30103	10k 5% 0.062W
3897	4822 051 30472	4k7 5% 0.062W
3898	4822 051 30101	100Ω 5% 0.062W
4410	4822 051 10102	1k 5% 0.1W 0805
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5001	4822 157 11828	22μH 20% 0805
5002	4822 157 11775	6.8μH 5%
5101	4822 157 11775	6.8μH 5%
5102	4822 157 71303	0.39μH 10%
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7μH 10%
5108	4822 157 11534	Coil var. 78MHz
5301	4822 157 11876	6.8μH 10% 0805
5302	4822 157 11876	6.8μH 10% 0805
5305	4822 157 11778	5.6μH 10% 0805
5306	4822 157 11778	5.6μH 10% 0805
5307	4822 157 11778	5.6μH 10% 0805
5501	4822 157 11775	6.8μH 5%
5502	4822 157 11775	6.8μH 5%
5540	4822 157 71304	1μH 10%
5553	4822 157 11855	68μH 10% 0805
5559	4822 157 11775	6.8μH 5%
5560	4822 157 11775	6.8μH 5%
5562	4822 157 11775	6.8μH 5%
5601	4822 157 11775	6.8μH 5%
5602	4822 157 11779	Bead 100MHz 30Ω
5603	4822 157 70503	4.7μH
5604	4822 157 11775	6.8μH 5%
5605	4822 157 11779	Bead 100MHz 30Ω
5606	4822 157 11775	6.8μH 5%
5608	4822 157 11778	5.6μH 10% 0805
5609	4822 157 11778	5.6μH 10% 0805
5610	4822 157 11778	5.6μH 10% 0805
5611	4822 157 11781	Bead 100MHz 600Ω
5613	4822 157 11781	Bead 100MHz 600Ω
5615	4822 157 11778	5.6μH 10% 0805
5616	4822 157 11778	5.6μH 10% 0805
5617	4822 157 11778	5.6μH 10% 0805
5620	4822 157 11775	6.8μH 5%
5621	4822 157 11782	100μH 10% 0805
5751	4822 157 11775	6.8μH 5%
5752	4822 157 11775	6.8μH 5%
5753	4822 157 11775	6.8μH 5%
5754	4822 157 11876	6.8μH 10% 0805
5755	4822 157 11876	6.8μH 10% 0805
5756	4822 157 11775	6.8μH 5%



6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	4822 130 11366	BZX284-C3V9
6101	4822 130 11027	BZX284-C33
6103	4822 130 10414	BA792
6104	4822 130 10414	BA792
6106	4822 130 83757	BAS216
6107	4822 130 83757	BAS216
6200	4822 130 10794	BZX284-C10
6201	4822 130 10852	BZX284-C6V8
6202	4822 130 10794	BZX284-C10
6203	4822 130 10794	BZX284-C10
6204	4822 130 10852	BZX284-C6V8
6205	4822 130 10794	BZX284-C10

6206	4822 130 10794	BZX284-C10
6207	4822 130 10852	BZX284-C6V8
6208	4822 130 10794	BZX284-C10
6209	4822 130 10794	BZX284-C10
6210	4822 130 10852	BZX284-C6V8
6211	4822 130 10852	BZX284-C6V8
6212	4822 130 10852	BZX284-C6V8
6213	4822 130 10852	BZX284-C6V8
6214	4822 130 10794	BZX284-C10
6215	4822 130 10794	BZX284-C10
6216	4822 130 10794	BZX284-C10
6217	4822 130 10794	BZX284-C10
6218	4822 130 11031	BZX284-C12
6219	4822 130 10852	BZX284-C6V8
6220	4822 130 10794	BZX284-C10
6221	4822 130 10794	BZX284-C10
6222	4822 130 10852	BZX284-C6V8
6223	4822 130 10794	BZX284-C10
6224	4822 130 10794	BZX284-C10
6225	4822 130 10852	BZX284-C6V8
6226	4822 130 10852	BZX284-C6V8
6227	4822 130 10852	BZX284-C6V8
6228	4822 130 10852	BZX284-C6V8
6229	4822 130 10794	BZX284-C10
6230	4822 130 10794	BZX284-C10
6231	4822 130 10794	BZX284-C10
6232	4822 130 10794	BZX284-C10
6233	4822 130 10852	BZX284-C6V8
6234	4822 130 10794	BZX284-C10
6235	4822 130 10794	BZX284-C10
6236	4822 130 10794	BZX284-C10
6237	4822 130 10794	BZX284-C10
6238	4822 130 10654	BAT254
6250	4822 130 10654	BAT254
6260	4822 130 10794	BZX284-C10
6261	4822 130 10794	BZX284-C10
6340	4822 130 83757	BAS216
6341	4822 130 11594	BZX284-C47
6344	4822 130 83757	BAS216
6350	4822 130 11414	BZX284-C27
6422	4822 051 20008	0Ω jumper 0805
6429	4822 130 10648	BZX284-C5V6
6430	4822 130 83757	BAS216
6431	4822 130 83757	BAS216
6432	4822 130 83757	BAS216
6751	4822 130 10794	BZX284-C10
6752	4822 130 10794	BZX284-C10
6753	4822 130 10794	BZX284-C10
6754	4822 130 10794	BZX284-C10
6755	4822 130 10794	BZX284-C10
6756	4822 130 10794	BZX284-C10
6757	4822 130 83757	BAS216



7001	9322 136 53668	MSM51V18165D-60JS
7002	3104 317 77777	SOFTW ASSY 3104 317
		77777
7003	9352 629 88557	SAAS801/011 V30
7004	4822 130 60511	BC847B
7005	4822 130 60373	BC856B
7006	4822 130 60373	BC856B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTCT114ET
7012	4822 130 60373	BC856B
7013	4822 209 17308	M29W400T-100M1
7014	4822 130 60511	BC847B
7015	4822 130 60373	BC856B
7016	4822 130 60511	BC847B
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	4822 130 60373	BC856B
7111	4822 130 60511	BC847B
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7216	4822 130 60511	BC847B
7300	4822 209 16979	TDA9330H/N1
7341	4822 130 60373	BC856B
7351	4822 130 60373	BC856B
7402	4822 209 17311	TDA9178T/N1
7418	4822 130 60373	BC856B
7419	4822 130 60373	BC856B
7420	4822 130 60373	BC856B
7438	4822 130 10255	MMUN2213

7501	4822 209 17487	TDA9320AH/N1
7502	4822 130 60511	BC847B
7555	4822 130 60373	BC856B
7560	4822 209 12998	SA44961/V3/S1
7561	4822 130 60511	BC847B
7601	4822 130 60373	BC856B
7602	4822 130 60511	BC847B
7603	4822 130 60373	BC856B
7604	4822 209 73852	PMBT2369
7605	4822 209 73852	PMBT2369
7608	4822 209 90034	SA44990H/V0
7609	9352 626 35557	SA44978H/V2
7610	4822 130 60373	BC856B
7611	4822 130 60373	BC856B
7612	4822 130 60373	BC856B
7613	4822 209 15882	MC33269D
7614	4822 209 17307	MSM54V12222A-30JS
7615	4822 209 17307	MSM54V12222A-30JS
7616	3104 317 41921	SOFTWARE FBX R3_13
7750	4822 209 16978	LF33CV
7751	4822 209 16803	MSP3410D-PS-B4
7752	5322 209 11102	HEF4052BT
7753	5322 209 11102	HEF4052BT
7756	4822 209 30095	LM833D
7757	4822 209 31378	NJM4556MB
7758	4822 209 30095	LM833D
7770	4822 209 17421	SA47712H/N203
7772	4822 209 30095	LM833D
7774	4822 130 60511	BC847B

Optical Assembly Replacement Parts List

(See fig 9.1)

A	3135 010 02590	Shoulder Screw 1/4-20 (CRT To Coupler) (x12)
B	3135 011 00611	MM Spring, Tube MT, CRT Mounting (x12)
D	3135 011 02370	CRT Bracket-Spring Assembly (x3)
E	9322 107 66682	CRT Red P16LFM00RFA
E	9322 107 67682	CRT Green P16LFMOOHLA
E	9322 107 68682	CRT Blue P16LFM00BMB
H	3135 013 02321	Seal, CRT (x3)
I	4835 310 67004	Coolant (Enough for 1 CRT)
I	4835 310 57233	Coolant (Enough for 3 CRTs)
K	3135 014 02640	Fill Plug (x3)
L	3135 013 01230	Seal, O-Ring (x3)
M	3135 014 02680	Cap, Coupler (Diaphragm Cover) (x3)
O	3135 013 01060	Diaphragm, Coupler (x3)
P	3135 011 01943	Coupler, Red & Blue (Used in 0002) (x2)
P	3135 011 03633	Coupler, Red & Blue (Used in 0001) (x2)
P	3135 011 02322	Coupler, Green*
R	3135 013 02632	Lens Seal (Lens to Coupler) (x3)
S	3135 013 01070	Lens, C-Element (For Green)
S	3135 013 01080	Lens, C-Element (Red & Blue) (x2)
W	3135 013 00820	Lens, Delta 78 (Green & Red) (x2)
W	3135 013 00900	Lens, Delta 79 (Used in 0002) (x2)
W	3135 013 01050	Lens Integral (For Blue) (Used in 0001) (x2)
X	3135 010 02970	Screw 8-32.5 Torx (Lens to Coupler) (x12)
	2422 549 44234	Deflection Yoke DAV4194M (x3)
	3135 014 02605	Drip Barrier
	3135 010 00730	Focus Lead (H/V Transformer to Focus/G2 Block)
	2322 460 90519	Focus/Screen Control
	3135 010 00760	HV Anode Lead (x3)
	3135 013 00121	Light Shield (Used in 0002) (x2)